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 Goddard, Audrey
 Godowski, Paul J.
 Grimaldi, J. Christopher
 Gurney, Austin L.
 Kljavin, Ivar J.
 Napier, Mary A.
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 Roy, Margaret Ann
 Stewart, Timothy A.
 Tumas, Daniel
 Watanabe, Colin K.
 Williams, P. Mickey
 Wood, William I.
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taaataccca cacctttttt tcgtaggtgg gcttttcta tcagagcttg 2200
 gctcataacc aaataaagt ttttgaaggc catggctttt cacacagtta 2250
 ttttatttta tgacgttato tgaagcaga ctgtaggag cagtattgag 2300
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 ttttttttca ggaacattg tgctctaaca gtatgactat tctttccccc 2400
 actcttaaac agtgtgatgt gtgttatcct aggaatgag agttggcaaa 2450
 caactttotca ttttgaatag agtttgtgtg tactcttcca tatttaattt 2500
 atatgataaa ataggtgggg agagtctgaa ccttaactgt catgttttgt 2550
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 tactocaatt atgttgccag tacactcatt gtacaggcgt ggagactcat 2650
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 gacaaggcaa aacatgacag tggattctct ttacaaatgg aaaaaaaaaa 2950
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 tggtaaaaat tgtaaatata aatgtgcaac ttg 3033

<210> 6
 <211> 251
 <212> PRT
 <213> Homo sapiens

<400> 6
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 Arg Tyr Trp Phe Ala Ala Thr Val Ala Val Pro Leu Val Gly Lys
 20 25 30
 Leu Gly Leu Ile Ser Pro Ala Tyr Leu Phe Leu Trp Pro Glu Ala
 35 40 45
 Phe Leu Tyr Arg Phe Gln Ile Trp Arg Pro Ile Thr Ala Thr Phe
 50 55 60
 Tyr Phe Pro Val Gly Pro Gly Thr Gly Phe Leu Tyr Leu Val Asn
 65 70 75
 Leu Tyr Phe Leu Tyr Gln Tyr Ser Thr Arg Leu Glu Thr Gly Ala
 80 85 90
 Phe Asp Gly Arg Pro Ala Asp Tyr Leu Phe Met Leu Leu Phe Asn
 95 100 105

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Trp | Ile | Cys | Ile | Val | Ile | Thr | Gly | Leu | Ala | Met | Asp | Met | Gln | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Met | Ile | Pro | Leu | Ile | Met | Ser | Val | Leu | Tyr | Val | Trp | Ala | Gln |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Asn | Arg | Asp | Met | Ile | Val | Ser | Phe | Trp | Phe | Gly | Thr | Arg | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Lys | Ala | Cys | Tyr | Leu | Pro | Trp | Val | Ile | Leu | Gly | Phe | Asn | Tyr | Ile |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Gly | Gly | Ser | Val | Ile | Asn | Glu | Leu | Ile | Gly | Asn | Leu | Val | Gly |
| | | | | 170 | | | | | 175 | | | | | 180 |
| His | Leu | Tyr | Phe | Phe | Leu | Met | Phe | Arg | Tyr | Pro | Met | Asp | Leu | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Arg | Asn | Phe | Leu | Ser | Thr | Pro | Gln | Phe | Leu | Tyr | Arg | Trp | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Ser | Arg | Arg | Gly | Gly | Val | Ser | Gly | Phe | Gly | Val | Pro | Pro | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Met | Arg | Arg | Ala | Ala | Asp | Gln | Asn | Gly | Gly | Gly | Gly | Arg | His |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Asn | Trp | Gly | Gln | Gly | Phe | Arg | Leu | Gly | Asp | Gln | | | | |
| | | | | 245 | | | | | 250 | | | | | |

<210> 7
 <211> 1373
 <212> DNA
 <213> Homo sapiens

<400> 7
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 gtcggcggt ctggcctagg gatcttccc gttgccctt tggggcgga 200
 tggtcgcga agaagaagac gaggtggagt gggtagtga gagcatcgcg 250
 gggttcctcg gaggccaga ctggtccatc occatcttgg actttgtgga 300
 acagaaatgt gaagttaact gcaaaggagg gcatgtgata actccaggaa 350
 gccagagcc ggtgattttg ttggcctgtg ttccccttgt ttttgatgat 400
 gaagaagaaa gcaaattgac ctatacagag attcatcagg aatacaaaaga 450
 actagtgtgaa aagctgttag aaggttacct caaagaaatt ggaattaatg 500
 aagatcaatt tcaagaagca tgcacttctc ctcttgcaaa gaccataca 550
 tcacaggcca ttttgcaacc tgtgttgga gcagaagatt ttactatctt 600
 taaagcaatg atggtccaga aaaacattga aatgcagctg caagccattc 650
 gaataattca agagagaaat ggtgtattac ctgactgctt aaccgatggc 700

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 ggaaaaaaca gttatcagag gctaaaacag aagagccac agtgattcc 850
 agtgaagctg caataatgaa taattcccaa ggggatgggtg aacattttgc 900
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 ctttgggaag aaaagtggaa aggtctgaaa ctctccct cccacaaaaa 1000
 ggctgaaga ttctgggtt agagcatgag agcattgaag gaccaatagc 1050
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 ggaaatgaca gagaaccag aaatgacagc agaggagaag caaacattac 1250
 taaagaggag attgcttga gagaaactca aagaagaagt tattaataag 1300
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 taaattattt agtccttaca ctg 1373

<210> 8
 <211> 367
 <212> PRT
 <213> Homo sapiens

<400> 8
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 Ile Ala Gly Phe Leu Arg Gly Pro Asp Trp Ser Ile Pro Ile Leu
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 Asp Phe Val Glu Gln Lys Cys Glu Val Asn Cys Lys Gly Gly His
 35 40 45
 Val Ile Thr Pro Gly Ser Pro Glu Pro Val Ile Leu Val Ala Cys
 50 55 60
 Val Pro Leu Val Phe Asp Asp Glu Glu Glu Ser Lys Leu Thr Tyr
 65 70 75
 Thr Glu Ile His Gln Glu Tyr Lys Glu Leu Val Glu Lys Leu Leu
 80 85 90
 Glu Gly Tyr Leu Lys Glu Ile Gly Ile Asn Glu Asp Gln Phe Gln
 95 100 105
 Glu Ala Cys Thr Ser Pro Leu Ala Lys Thr His Thr Ser Gln Ala
 110 115 120
 Ile Leu Gln Pro Val Leu Ala Ala Glu Asp Phe Thr Ile Phe Lys
 125 130 135
 Ala Met Met Val Gln Lys Asn Ile Glu Met Gln Leu Gln Ala Ile
 140 145 150

Arg Ile Ile Gln Glu Arg Asn Gly Val Leu Pro Asp Cys Leu Thr
 155 160
 Asp Gly Ser Asp Val Val Ser Asp Leu Glu His Glu Glu Met Lys
 170 175 180
 Ile Leu Arg Glu Val Leu Arg Lys Ser Lys Glu Glu Tyr Asp Gln
 185 190 195
 Glu Glu Glu Arg Lys Arg Lys Lys Gln Ser Glu Ala Lys Thr
 200 205 210
 Glu Glu Pro Thr Val His Ser Ser Glu Ala Ala Ile Met Asn Asn
 215 220 225
 Ser Gln Gly Asp Gly Glu His Phe Ala His Pro Pro Ser Glu Val
 230 235 240
 Lys Met His Phe Ala Asn Gln Ser Ile Glu Pro Leu Gly Arg Lys
 245 250 255
 Val Glu Arg Ser Glu Thr Ser Ser Leu Pro Gln Lys Gly Leu Lys
 260 265 270
 Ile Pro Gly Leu Glu His Ala Ser Ile Glu Gly Pro Ile Ala Asn
 275 280 285
 Leu Ser Val Leu Glu Thr Glu Glu Leu Arg Gln Arg Glu His Tyr
 290 295 300
 Leu Lys Gln Lys Arg Asp Lys Leu Met Ser Met Arg Lys Asp Met
 305 310 315
 Arg Thr Lys Gln Ile Gln Asn Met Glu Gln Lys Gly Lys Pro Thr
 320 325 330
 Gly Glu Val Glu Glu Met Thr Glu Lys Pro Glu Met Thr Ala Glu
 335 340 345
 Glu Lys Gln Thr Leu Leu Lys Arg Arg Leu Leu Ala Glu Lys Leu
 350 355 360
 Lys Glu Glu Val Ile Asn Lys
 365

<210> 9
 <211> 418
 <212> DNA
 <213> Homo sapiens

<400> 9
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 ctatacagag attcatcagc aatacaaaaga actagttgaa aagctgttag 100
 aaggttacct caaagaaatt ggaattaatg aagatcaatt tcaagaagca 150
 tgcacttctc ctcttgcaaa gaccataca tcacaggcca tttttgcaac 200
 ctgtgttggc agcagaagat ttactatct ttaaagcaat gatgtccag 250
 aaaaacattg aaatgcagct gcaagccatt cgaataattc aagagagaaa 300

tggtgtatta cctgactgct taaccgatgg ctctgatgtg gtcagtgacc 350
 ttgaacacga agagatgaaa atcctgaggg aagttcttag aaaatcaaaa 400
 gaggaatatg accaggaa 418

<210> 10
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 10
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<210> 11
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 11
 ctaagaactt ccctcaggat ttt 23

<210> 12
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 12
 atgaagatca atttcaagaa gcatgcactt ctcctcttgc 40

<210> 13
 <211> 2886
 <212> DNA
 <213> Homo sapiens

<400> 13
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 tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 150
 cactagaagc tcttctgagg gaggttaatta aaaaacagtg gaatgaaaa 200
 acagtgctgt agtcacccctg taatatgctc cttgtcaaca atgtatacat 250
 tcctgctagg tgccatattc attgctttta gctcaagtcg catcttacta 300
 gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 350
 tgtgaatgtg tgctcagaac tgggtgaagct agttttctgt gtgctgtgtg 400
 cattctgtgt tataaagaaa gatcatcaaa gtgaaaattt gaaatatgct 450

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 ttatttctct gataacttga ttgtctttcta tgtcctgtcc tatcttcaac 550
 cagccatggc tggttatcttc tcaaatttta gcattataac aacagctctt 600
 ctattcagga tagtgetgaa gaggcgtcta aactggatcc agtgggcttc 650
 cctcctgact ttatttttgt ctattgtggc cttgactgcc gggactaaaa 700
 ctttacagca caacttgga ggaagtggat ttcatcaga tgcctttttc 750
 agcccttcca attcctgcct tcttttcaaga agtgagtgtc ccagaaaaga 800
 caattgtaca gcaaaggaat ggaacttttc tgaagctaaa tggaacacca 850
 cagccagagt ttocagtcac atccgtcttg gcattggcca tgtttatt 900
 atagtccagt gttttatttc ttcaatggct aatatctata atgaaaagat 950
 actgaaggag gggaaccagc tcaactgaaag catcttcata cagaacagca 1000
 aactctattt ctttggcatt ctgtttaatg ggctgactct gggccttcag 1050
 aggagtaacc gtgatcagat taagaactgt ggattttttt atggccacag 1100
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 caagaaagga tccgagatct aagtggcaat ctttgggagc gttccagtgg 1400
 ggatggagaa gaactagaaa gacttaccaa acccaagagt gatgagtcag 1450
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 agctgtgact attgtatatc ttccaagag ttgaaatgct ggcttcagaa 2350
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 tctgtctccc tttctcctaa gtttcgatga gatgaatata aggtaatata 2800
 ctattatata attcatttgt gataccaca ataatatgac tgcgaagaat 2850
 tgggtgaaat ttgtaattaa aataattatt aaacct 2886

<210> 14
 <211> 424
 <212> PRT
 <213> Homo sapiens

<400> 14
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 Thr Met Tyr Thr Phe Leu Leu Gly Ala Ile Phe Ile Ala Leu Ser
 20 25 30
 Ser Ser Arg Ile Leu Leu Val Lys Tyr Ser Ala Asn Glu Glu Asn
 35 40 45
 Lys Tyr Asp Tyr Leu Pro Thr Thr Val Asn Val Cys Ser Glu Leu
 50 55 60
 Val Lys Leu Val Phe Cys Val Leu Val Ser Phe Cys Val Ile Lys
 65 70 75
 Lys Asp His Gln Ser Arg Asn Leu Lys Tyr Ala Ser Trp Lys Glu
 80 85 90
 Phe Ser Asp Phe Met Lys Trp Ser Ile Pro Ala Phe Leu Tyr Phe
 95 100 105
 Leu Asp Asn Leu Ile Val Phe Tyr Val Leu Ser Tyr Leu Gln Pro
 110 115 120

| | | | |
|-----------------|---------------------|---------------------|-----|
| Ala Met Ala Val | Ile Phe Ser Asn Phe | Ser Ile Ile Thr Thr | Ala |
| | 125 | 130 | 135 |
| Leu Leu Phe Arg | Ile Val Leu Lys Arg | Arg Leu Asn Trp Ile | Gln |
| | 140 | 145 | 150 |
| Trp Ala Ser Leu | Leu Thr Leu Phe Leu | Ser Ile Val Ala Leu | Thr |
| | 155 | 160 | 165 |
| Ala Gly Thr Lys | Thr Leu Gln His Asn | Leu Ala Gly Arg Gly | Phe |
| | 170 | 175 | 180 |
| His His Asp Ala | Phe Phe Ser Pro Ser | Asn Ser Cys Leu Leu | Phe |
| | 185 | 190 | 195 |
| Arg Ser Glu Cys | Pro Arg Lys Asp Asn | Cys Thr Ala Lys Glu | Trp |
| | 200 | 205 | 210 |
| Thr Phe Pro Glu | Ala Lys Trp Asn Thr | Thr Ala Arg Val Phe | Ser |
| | 215 | 220 | 225 |
| His Ile Arg Leu | Gly Met Gly His Val | Leu Ile Ile Val Gln | Cys |
| | 230 | 235 | 240 |
| Phe Ile Ser Ser | Met Ala Asn Ile Tyr | Asn Glu Lys Ile Leu | Lys |
| | 245 | 250 | 255 |
| Glu Gly Asn Gln | Leu Thr Glu Ser Ile | Phe Ile Gln Asn Ser | Lys |
| | 260 | 265 | 270 |
| Leu Tyr Phe Phe | Gly Ile Leu Phe Asn | Gly Leu Thr Leu Gly | Leu |
| | 275 | 280 | 285 |
| Gln Arg Ser Asn | Arg Asp Gln Ile Lys | Asn Cys Gly Phe Phe | Tyr |
| | 290 | 295 | 300 |
| Gly His Ser Ala | Phe Ser Val Ala Leu | Ile Phe Val Thr Ala | Phe |
| | 305 | 310 | 315 |
| Gln Gly Leu Ser | Val Ala Phe Ile Leu | Lys Phe Leu Asp Asn | Met |
| | 320 | 325 | 330 |
| Phe His Val Leu | Met Ala Gln Val Thr | Thr Val Ile Ile Thr | Thr |
| | 335 | 340 | 345 |
| Val Ser Val Leu | Val Phe Asp Phe Arg | Pro Ser Leu Glu Phe | Phe |
| | 350 | 355 | 360 |
| Leu Glu Ala Pro | Ser Val Leu Leu Ser | Ile Phe Ile Tyr Asn | Ala |
| | 365 | 370 | 375 |
| Ser Lys Pro Gln | Val Pro Glu Tyr Ala | Pro Arg Gln Glu Arg | Ile |
| | 380 | 385 | 390 |
| Arg Asp Leu Ser | Gly Asn Leu Trp Glu | Arg Ser Ser Gly Asp | Gly |
| | 395 | 400 | 405 |
| Glu Glu Leu Glu | Arg Leu Thr Lys Pro | Lys Ser Asp Glu Ser | Asp |
| | 410 | 415 | 420 |
| Glu Asp Thr Phe | | | |

<210> 15
<211> 755
<212> DNA
<213> Homo sapiens

<400> 15
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ctatacctac tgtagcttct ccacgtatgg accctaaagg ctactgctgc 150
tactacgggg ctagacagtt actgtctcag ctctaggatg tgcgttcttc 200
cactagaagc tcttctgagg gaggttaatta aaaaacagtg gaatggaaaa 250
acagtgtctg agtcatcctg taatatgctc cttgtcaaca atgtatacat 300
tcctgctagg tgccatattc attgctttta gctcaagtcg catcttacta 350
gtgaagtatt ctgccaatga agaaaacaag tatgattatc ttccaactac 400
tgtgaagtgt tgctcagaac tgggtgaagct agttttctgt gtgcttgtgt 450
cattctgtgt tataaagaaa gatcatcaaa gtagaaattt gaaatatgct 500
tcctggaagg aattctctga tttcatgaag tggtcattc ctgcctttct 550
ttatttctct gataacttga ttgtcttcta tgcctgtgcc tatcttcaac 600
cagccatggc tggtatcttc tcaaatttta gcattataac aacagctctt 650
ctattcagga tagtgctgaa gaggcgtcta aactggatcc agtgggcttc 700
cctcctgact ttatttttgt ctattgtggc cttgactgcc gggactaaaa 750
cttta 755

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 16
ctatacctac tgtagcttct 20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 17
tcagagaatt ccttcagga 20

<210> 18
<211> 40
<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 18

acagtgcctgt agtcatcctg taatatgctc ettgtaaca 40

<210> 19

<211> 2142

<212> DNA

<213> Homo sapiens

<400> 19

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gcggcctcgg gggcagagga gcatcccgtc taccaggtcc caagcggcgt 150
ggcccgcggg tcatggccaa aggagaagcg gccgagagcg gctccggcgg 200
ggggctgcta cccaccagca tctctocaaag cactgaacgc ccggcccagg 250
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ctttgtctat caottggggg agccccctac caggtgacgg gctgtgccct 350
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 ggccatgccc ggaacactaa tgtagaaacc ttttttttcc agagcctaata 2050
 taataactta atgactgtgt acatagcaat gtgtgtgtat gtatatgtct 2100
 gtgagctatt aatgttatta attttcataa aagctggaaa gc 2142

<210> 20

<211> 458

<212> PRT

<213> Homo sapiens

<400> 20

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Trp | Leu | Arg | Trp | Ala | Leu | Ser | Leu | Pro | Pro | Ser | Ser | Cys | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Trp | Ala | Glu | Pro | Gly | Met | Pro | Ser | Gln | Thr | Pro | Trp | Trp | Ala | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Ser | Ala | Asn | Pro | Pro | Gly | Pro | Ala | Trp | Val | Ala | Leu | Cys | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Gly | Ser | Ser | Ser | Pro | Arg | Pro | Trp | Pro | Ser | Leu | Pro | Thr | Ser | Ser |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Gly | Ser | Cys | Pro | Thr | Ser | His | Thr | Ala | Arg | Pro | Ile | Gly | Thr |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Cys | Phe | Ser | Ile | Ala | Ser | Leu | Lys | Gln | Trp | Ser | Arg | Val | Ser | Met |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Phe | Pro | Thr | Arg | Leu | Ser | Pro | Cys | Ser | Ser | Ala | Thr | Glu | Gln | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|-----|-----|-----|-----|------------|
| Glu | Arg | Asp | Ser | Ala 110 | Thr | Ala | Tyr | Arg | Met 115 | Thr | Val | Glu | Val | Leu 120 |
| Gly | Thr | Val | Leu | Gly 125 | Thr | Ala | Ile | Gln | Gly 130 | Gln | Ile | Val | Gly | Gln 135 |
| Ala | Asp | Thr | Pro | Cys 140 | Phe | Gln | Asp | Phe | Asn 145 | Ser | Ser | Thr | Val | Ala 150 |
| Ser | Gln | Ser | Ala | Asn 155 | His | Thr | His | Gly | Thr 160 | Thr | Ser | His | Arg | Glu 165 |
| Thr | Gln | Lys | Ala | Tyr 170 | Leu | Leu | Ala | Ala | Gly 175 | Val | Ile | Val | Cys | Ile 180 |
| Tyr | Ile | Ile | Cys | Ala 185 | Val | Ile | Leu | Ile | Leu 190 | Gly | Val | Arg | Glu | Gln 195 |
| Arg | Glu | Pro | Tyr | Glu 200 | Ala | Gln | Gln | Ser | Glu 205 | Pro | Ile | Ala | Tyr | Phe 210 |
| Arg | Gly | Leu | Arg | Leu 215 | Val | Met | Ser | His | Gly 220 | Pro | Tyr | Ile | Lys | Leu 225 |
| Ile | Thr | Gly | Phe | Leu 230 | Phe | Thr | Ser | Leu | Ala 235 | Phe | Met | Leu | Val | Glu 240 |
| Gly | Asn | Phe | Val | Leu 245 | Phe | Cys | Thr | Tyr | Thr 250 | Leu | Gly | Phe | Arg | Asn 255 |
| Glu | Phe | Gln | Asn | Leu 260 | Leu | Leu | Ala | Ile | Met 265 | Leu | Ser | Ala | Thr | Leu 270 |
| Thr | Ile | Pro | Ile | Trp 275 | Gln | Trp | Phe | Leu | Thr 280 | Arg | Phe | Gly | Lys | Lys 285 |
| Thr | Ala | Val | Tyr | Val 290 | Gly | Ile | Ser | Ser | Ala 295 | Val | Pro | Phe | Leu | Ile 300 |
| Leu | Val | Ala | Leu | Met 305 | Glu | Ser | Asn | Leu | Ile 310 | Ile | Thr | Tyr | Ala | Val 315 |
| Ala | Val | Ala | Ala | Gly 320 | Ile | Ser | Val | Ala | Ala 325 | Ala | Phe | Leu | Leu | Pro 330 |
| Trp | Ser | Met | Leu | Pro 335 | Asp | Val | Ile | Asp | Asp 340 | Phe | His | Leu | Lys | Gln 345 |
| Pro | His | Phe | His | Gly 350 | Thr | Glu | Pro | Ile | Phe 355 | Phe | Ser | Phe | Tyr | Val 360 |
| Phe | Phe | Thr | Lys | Phe 365 | Ala | Ser | Gly | Val | Ser 370 | Leu | Gly | Ile | Ser | Thr 375 |
| Leu | Ser | Leu | Asp | Phe 380 | Ala | Gly | Tyr | Gln | Thr 385 | Arg | Gly | Cys | Ser | Gln 390 |
| Pro | Glu | Arg | Val | Lys 395 | Phe | Thr | Leu | Asn | Met 400 | Leu | Val | Thr | Met | Ala 405 |
| Pro | Ile | Val | Leu | Ile 410 | Leu | Leu | Gly | Leu | Leu 415 | Leu | Phe | Lys | Met | Tyr 420 |

Pro Ile Asp Glu Glu Arg Arg Arg Gln Asn Lys Lys Ala Leu Gln
425 430 435

Ala Leu Arg Asp Glu Ala Ser Ser Ser Gly Cys Ser Glu Thr Asp
440 445 450

Ser Thr Glu Leu Ala Ser Ile Leu
455

<210> 21
<211> 571
<212> DNA
<213> Homo sapiens

<400> 21
gggaaacgca aaaggcatatc ctgctggcag cgggggtcat tgtctgtatc 50
tataatact gtgctgtcat cctgatcctg ggcgtgcggg agcagagaga 100
accctatgaa gccacgacgt ctgagccaat cgcctacttc cggggcctac 150
ggctggctcat gagccacggc ccatacatca aacttattac tggcttcctc 200
ttcactcctc tggctttcat gctgggtggg gggaaactttg tcttgttttg 250
cacctacaac ttgggcttcc gcaatgaatt ccagaatcta ctccctggcca 300
tcatgctctc ggccaattta accattocca totggcagtg gttcttgacc 350
cggtttgcca agaagacagc tgtatatgtt gggatctcat cagcagtgcc 400
atttctcatc ttggtggccc toatggagag taacctcatc attacatatg 450
cggtagctgt ggcagctggc atcagtggtg cagctgcctt cttactaccc 500
tgggccatgc tgcctgatgt cattgacgac ttccatctga agcagcccca 550
cttccatgga accgagccca t 571

<210> 22
<211> 1173
<212> DNA
<213> Homo sapiens

<400> 22
ggggcttcgg cgcacggcgc cagcgctagt cggctctgga aggattttaca 50
aaagggtgca gtaggagcag gtctgaagac taacattttg tgaagttgta 100
aaacagaaaa cctgttagaa atgtggtggt ttcagcaagg cctcagtttc 150
cttccttcag cccttgtaat ttggacatct gctgctttca tattttcata 200
cattactgca gtaacactcc accatataga cccggcttta ctttatatca 250
gtgacactgg tacagtagct ccagaaaaat gcttattttg ggcaatgcta 300
aatattgagg cagttttatg cattgctacc atttatgttc gttataagca 350
agttcatgct ctgagtcctg aagagaacgt tatcatcaaa ttaaacagg 400
ctggccttgt acttggaata ctgagttgtt taggactttc tattgtggca 450

aacttcaga aaacaacct tttgctgca catgtaagt gagctgtgct 500
 tacctttggt atgggtcat tatatatgt tgttcagacc atcctttcct 550
 accaaatgca gccaaaatc catggcaaac aagtcttctg gatcagactg 600
 ttgttggtta tctggtgtg agtaagtgca cttagcatgc tgacttgetc 650
 atcagttttg cacagtggca attttgggac tgatttagaa cagaaactcc 700
 attggaaccc cgaggacaaa ggttatgtgc ttcacatgat cactactgca 750
 gcgaatggt ctatgtcatt ttccttctt ggtttttcc tgacttacat 800
 tcgtgatttt cagaaaattt ctttacgggt ggaagccaat ttacatggat 850
 taacctcta tgacactgca ccttgcccta ttaacaatga acgaacacgg 900
 ctactttcca gagatatgt atgaaaggat aaaatatct tgtaatgatt 950
 atgattctca gggattggg aaaggttcac agaagtgtgt tattcttctc 1000
 tgaaattttc aaccacttaa tcaaggctga cagtaacact gatgaatgct 1050
 gataatcagg aaacatgaaa gaagccattt gatagattat tctaaaggat 1100
 atcatcaaga agactattaa aaacacctat gcctatactt ttttatctca 1150
 gaaaataaag tcaaaagact atg 1173

<210> 23
 <211> 266
 <212> PRT
 <213> Homo sapiens

<400> 23
 Met Trp Trp Phe Gln Gln Gly Leu Ser Phe Leu Pro Ser Ala Leu
 1 5 10 15
 Val Ile Trp Thr Ser Ala Ala Phe Ile Phe Ser Tyr Ile Thr Ala
 20 25 30
 Val Thr Leu His His Ile Asp Pro Ala Leu Pro Tyr Ile Ser Asp
 35 40 45
 Thr Gly Thr Val Ala Pro Glu Lys Cys Leu Phe Gly Ala Met Leu
 50 55 60
 Asn Ile Ala Ala Val Leu Cys Ile Ala Thr Ile Tyr Val Arg Tyr
 65 70 75
 Lys Gln Val His Ala Leu Ser Pro Glu Glu Asn Val Ile Ile Lys
 80 85 90
 Leu Asn Lys Ala Gly Leu Val Leu Gly Ile Leu Ser Cys Leu Gly
 95 100 105
 Leu Ser Ile Val Ala Asn Phe Gln Lys Thr Thr Leu Phe Ala Ala
 110 115 120
 His Val Ser Gly Ala Val Leu Thr Phe Gly Met Gly Ser Leu Tyr
 125 130 135

Met Phe Val Gln Thr Ile Leu Ser Tyr Gln Met Gln Pro Lys Ile
140 145 150

His Gly Lys Gln Val Phe Trp Ile Arg Leu Leu Leu Val Ile Trp
155 160 165

Cys Gly Val Ser Ala Leu Ser Met Leu Thr Cys Ser Ser Val Leu
170 175 180

His Ser Gly Asn Phe Gly Thr Asp Leu Glu Gln Lys Leu His Trp
185 190 195

Asn Pro Glu Asp Lys Gly Tyr Val Leu His Met Ile Thr Thr Ala
200 205 210

Ala Glu Trp Ser Met Ser Phe Ser Phe Phe Gly Phe Phe Leu Thr
215 220 225

Tyr Ile Arg Asp Phe Gln Lys Ile Ser Leu Arg Val Glu Ala Asn
230 235 240

Leu His Gly Leu Thr Leu Tyr Asp Thr Ala Pro Cys Pro Ile Asn
245 250 255

Asn Glu Arg Thr Arg Leu Leu Ser Arg Asp Ile
260 265

<210> 24
<211> 485
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 14, 484
<223> unknown base

<400> 24
cggaagcgttg ggcngcgcca gcggccagcg ctagtccgtc tggttaagtgc 50
ctgatgccga gttccgtctc tcgggtcttt tctgggtccc aggcaaagcg 100
gagcggagat cctcaaacgg cctagtgtct cgcgcttccg gagaaaatca 150
gcggtctaata taattcctct ggtttgttga agcagttacc aagaatcttc 200
aaaccotttcc cacaaaagct aattgagtac acgttctctg tgagtacacg 250
ttcctgttga ttacaaaag gtgcaggtat gagcaggtct gaagactaac 300
attttgtgaa gttgtaaaac agaaaacctg ttgaaatgt ggtggtttca 350
gcaaggcctc agtttccttc cttcagccct tgtaatttgg acatctgctg 400
ctttcatatt ttcatacatt actgcagtaa cactccacca tatagaccgg 450
gctttacctt atatcagtga cactgggtaca gtanc 485

<210> 25
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 25
acctgtaga aatgtggtg tttcagcaag gcctcagttt 40

<210> 26
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 26
ggagatagct gctatgggtt cttcaggcac aacttaacat gggaag 46

<210> 27
<211> 1399
<212> DNA
<213> Homo sapiens

<400> 27
cccacgcgtc cgcccgccgc tgcgtcccg agtgcaagt agcttctcgg 50
ctgccccgcg ggccgggggtg cggagccgac atgcgcccgc ttctcggcct 100
cettctggtc ttgcgcggct gcaccttcgc cttgtacttg ctgtcgacgc 150
gactgcccc cgggcggaga ctgggctcca ccgaggaggg tggaggcagg 200
tcgctgtggt tccctccga cctggcagag ctgcgggagc tctctgaggt 250
ccttcgagag taccggaagg agcaccaggc ctacgtgttc ctgctcttct 300
gcggcgccta cctctacaaa cagggtcttg ccaccccg ctcagcttc 350
ctgaatgttt tagctggtgc cttgtttggg ccattggctgg ggetttctgt 400
gtgctgtgtg ttgacctcg tgggtgccac atgtgtctac ctgctctcca 450
gtatttttgg caaacagttg gtggtgtcct actttctcga taaagtggcc 500
ctgctgcaga gaaaggtgga ggagaacaga aacagcttgt ttttttctt 550
attgttttgg agacttttcc ccatgacacc aaactgggtc ttgaacctct 600
cgcccccaat totgaacatt cccatcgtgc agttctctt ctcagttctt 650
atcggtttga tccatataa ttctatctgt gtgcagacag ggtccatcct 700
gtcaacccta acctctctgg atgctctttt ctcctgggac actgtcttta 750
agctgttggc cattgccatg gtggcattaa ttcctggaac cctcattaaa 800
aaatttagtc agaaacatct gcaattgaat gaaacaagta ctgctaatac 850
tatacacagt agaaaagaca catgatctgg attttctgtt tgcacatcc 900
ctggactcag ttgcttattt gtgtaatgga tgtggtcctc taaagccct 950
cattgttttt gattgccttc tataggatgt gtggacactg tgcacatg 1000

tgcagtgtct tttcagaaag gacactctgc tcttgaaggt gtattacatc 1050
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 agaaaatgct gtttgtggcc gggcgcggtg gctcacgcct gtaatcccag 1150
 cactttggga ggccgaggcc ggtgattcac aaggtcagga gttcaagacc 1200
 agcctggcca agatggtgaa atcctgtctc taataaaaaa aaaaaatta 1250
 gccaggcgtg gtggcaggca cctgtaatcc cagctactcg ggaggctgag 1300
 gcaggagaat tgcttgaacc aaggtggcag aggttgagcgt aagccaagat 1350
 cacaccactg cactccagcc tgggtgatag agtgagacac tgtcttgac 1399

<210> 28
 <211> 264
 <212> PRT
 <213> Homo sapiens

<400> 28
 Met Arg Pro Leu Leu Gly Leu Leu Leu Val Phe Ala Gly Cys Thr
 1 5 10 15
 Phe Ala Leu Tyr Leu Leu Ser Thr Arg Leu Pro Arg Gly Arg Arg
 20 25 30
 Leu Gly Ser Thr Glu Glu Ala Gly Gly Arg Ser Leu Trp Phe Pro
 35 40 45
 Ser Asp Leu Ala Glu Leu Arg Glu Leu Ser Glu Val Leu Arg Glu
 50 55 60
 Tyr Arg Lys Glu His Gln Ala Tyr Val Phe Leu Leu Phe Cys Gly
 65 70 75
 Ala Tyr Leu Tyr Lys Gln Gly Phe Ala Ile Pro Gly Ser Ser Phe
 80 85 90
 Leu Asn Val Leu Ala Gly Ala Leu Phe Gly Pro Trp Leu Gly Leu
 95 100 105
 Leu Leu Cys Cys Val Leu Thr Ser Val Gly Ala Thr Cys Cys Tyr
 110 115 120
 Leu Leu Ser Ser Ile Phe Gly Lys Gln Leu Val Val Ser Tyr Phe
 125 130 135
 Pro Asp Lys Val Ala Leu Leu Gln Arg Lys Val Glu Glu Asn Arg
 140 145 150
 Asn Ser Leu Phe Phe Phe Leu Leu Phe Leu Arg Leu Phe Pro Met
 155 160 165
 Thr Pro Asn Trp Phe Leu Asn Leu Ser Ala Pro Ile Leu Asn Ile
 170 175 180
 Pro Ile Val Gln Phe Phe Phe Ser Val Leu Ile Gly Leu Ile Pro
 185 190 195
 Tyr Asn Phe Ile Cys Val Gln Thr Gly Ser Ile Leu Ser Thr Leu
 200 205 210

Thr Ser Leu Asp Ala Leu Phe Ser Trp Asp Thr Val Phe Lys Leu
 215 220
 Leu Ala Ile Ala Met Val Ala Leu Ile Pro Gly Thr Leu Ile Lys
 230 235 240
 Lys Phe Ser Gln Lys His Leu Gln Leu Asn Glu Thr Ser Thr Ala
 245 250 255
 Asn His Ile His Ser Arg Lys Asp Thr
 260

<210> 29
 <211> 1292
 <212> DNA
 <213> Homo sapiens

<400> 29
 ccgaggcggg aggagccga gggggcgca gccccgcatg aatcattgta 50
 gtcaatcatt ttccagtctc cagccgctca gttgtgatca agggacacgt 100
 ggtttccgaa ctgccagctc agaataggaa aataacttgg gatitttatat 150
 tggaagacat ggatcttgcg gccaacgaga tcagcattta tgaacaaact 200
 tcagagactg ttgatttggg gagacagacc ggccatcagt gtggcatgtc 250
 agagaaggca attgaaaaat ttatcagaca gctgctggaa aagaatgaac 300
 ctccagagacc cccccgcag tatctctcc ttatagttgt gtataaggtt 350
 ctccgaacct tgggattaat ctgtctcact gcctactttg tgattcaacc 400
 ttccagccca ttagcacctg agccagtgtc ttctggagct cacacctggc 450
 gctcactcat ccatcacatt aggetgatgt ccttgcccat tgccaagaag 500
 tacatgtcag aaaataaggg agttcctctg catgggggtg atgaagacag 550
 accctttcca gactttgacc cctggtggac aaacgactgt gaggagaatg 600
 agtcagagcc cattctgccc aactgcactg gctgtgccc gaaacacctg 650
 aagggtgatgc tcctggaaga cggcccaagg aaatttgaga ggctccatcc 700
 actggtgatc aagacgggaa agcccctgtt ggagggaagat attcagcatt 750
 ttttgtgcca gtaccctgag gcgacagaag gcttctctga agggtttttc 800
 gccaaagtgt ggcgtgctt tcctgagcgg tggttcccat ttcttatcc 850
 atggaggaga cctctgaaca gatcacaat gttacgtgag ctttttccctg 900
 ttttcaatca cctgccattt ccaaaagatg cctctttaa caagtgtctc 950
 tttcttcacc cagaacctgt tgtggggagt aagatgcata agatgcctga 1000
 cctattttatc attggcagcg gtgaggccat gttgcagctc atccctccct 1050
 tccagtgcg aagacattgt cagtctgtgg ccatgccaat agagccaggg 1100
 gatatcggt atgtcgacac caccactgg aaggtctacg ttatagccag 1150

Lys Asp Ala Ser Leu Asn Lys Cys Ser Phe Leu His Pro Glu Pro
 260 265 270
 Val Val Gly Ser Lys Met His Lys Met Pro Asp Leu Phe Ile Ile
 275 280 285
 Gly Ser Gly Glu Ala Met Leu Gln Leu Ile Pro Pro Phe Gln Cys
 290 295 300
 Arg Arg His Cys Gln Ser Val Ala Met Pro Ile Glu Pro Gly Asp
 305 310 315
 Ile Gly Tyr Val Asp Thr Thr His Trp Lys Val Tyr Val Ile Ala
 320 325 330
 Arg Gly Val Gln Pro Leu Val Ile Cys Asp Gly Thr Ala Phe Ser
 335 340 345
 Glu Leu

<210> 31
 <211> 478
 <212> DNA
 <213> Homo sapiens

<400> 31
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 gcccgagggg cgcgagcccc gcatgaatca ttgtagtcaa tcattttcca 100
 gttctcagcc gttcagttgt gatcaaggga cactgtggtt ccgaactgcc 150
 agctcagaat aggaaaataa cttgggattt tatattggaa gacatggatc 200
 ttgtgccaac cgagatcagc atttatgaca aactttcaga gactgttgat 250
 ttggtgagac agaccggcca tcagtgtggc atgtcagaga aggcaattga 300
 aaaatttata agacagctgc tggaaaagaa tgaacctcag agaccccccc 350
 cgcagtatcc tctccttata gttgtgtata aggttctcgc aaccttggga 400
 ttaatcttgc tcactgccta ctttgtgatt caacctttca gccattagc 450
 aacctgagcca gtgctttgtg gagctcac 478

<210> 32
 <211> 3531
 <212> DNA
 <213> Homo sapiens

<400> 32
 cccacgcgtc cgcccacgcg tccggctgaa cacctcttct ttggagtcag 50
 ccactgatga ggcaggggtc ccacttgcag ctgcagcagc tgcagcagct 100
 gcagagcgct gctcctggct ggtgccactg gtgcgcacgc tgctagaccg 150
 tgcctatgag ccgctggggc tgcagtgggg actgccctcc tgcacacca 200
 ccaatggcag cccacattc tttgaagact tccaggcttt ttgtgccaca 250

acgagaaggt aggcgatgtg gtgctacccc cgtggggcag ctctcctgag 1900
 gacttcaccc agcagaccg ccaggctctg gagtcggagt atgtgtctgc 1950
 acacctacac gagtggatcg acctcatctt tggctacaag cagcgggggc 2000
 cagccgcccga ggaggccctc aatgtcttct attactgcac ctatgagggg 2050
 gctgtagacc tggaccatgt gacagatgag cgggaacgga aggtctctgga 2100
 gggcattatc agcaactttg ggagactcc ctgtcagctg ctgaaggagc 2150
 cacatccaac tcggctctca gctgaggaag cagcccatcg ccttgcacgc 2200
 ctggacacta actcacctag catcttcacg cacctggacg aactcaaggc 2250
 attcttcgca gagtgactg tgagtgcCag tgggctgctg ggcaoccaca 2300
 gctgggttgc ctatgaccgc aacataagca actacttcag cttcagcaaa 2350
 gacccacca tgggcagcca caagacgcag cgaactgctga gtggcccgctg 2400
 ggtgccagcg agtgggtgtga gtggacaagc actggcagtg gccccggatg 2450
 gaaagctgct attcagcggg ggccactggg atggcagcct gcgggtgact 2500
 gcactacccc gtggcaagct gttgagccag ctcagctgcc acctgtatgt 2550
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 cccgggacac cacgtgcatg gtgtggcggc tcctgcacga ggggtggtctg 2650
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 tgcagtgagc tgtgtggcca tcagcactga acttgacatg gctgtgtctg 2750
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 cctggcattg gggccgaag gccagattgt ggtacagagc tcagcgtggg 2900
 aacgtctctg ggcccaggtc acctactcct tgcacctgta ttcagtcaat 2950
 gggaagttgc gggcttcaact gcccctggca gacagccta cagccctgac 3000
 ggtgacagag gactttgtgt tgctggggcac cgcccatgac gccctgcaca 3050
 tctccaact aaacacactg ctcccgccgc cgctccctt gcccatgaag 3100
 gtggccatcc gcagcgtggc cgtgaccaag gagcgcagcc acgtgctggt 3150
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 aggtgcgcag cagccagttc gcgcggaagc tgtggcggtc ctgcggcgcc 3250
 atctcccagg tgtcctcggg agagacggaa tacaacccta ctgaggcgcg 3300
 ctgaacctg cagctccggc gtctcgggcc ccgccccggg caggcctggc 3350
 ccgggaggcc ccgcccagaa gtcggcgggg acaccccggg gtgggcagcc 3400
 cagggggtga gcggggccca ccctgccag ctcagggatt ggcgggcgat 3450

gttacccct cagggattgg cgggcggaag tcccgccct cgcgggtga 3500
 ggggcgcccc tgagggccag cactggcgctc t 3531

<210> 33
 <211> 1003
 <212> PRT
 <213> Homo sapiens

<400> 33
 Met Ser Gln Phe Glu Met Asp Thr Tyr Ala Lys Ser His Asp Leu
 1 5 10 15
 Met Ser Gly Phe Trp Asn Ala Cys Tyr Asp Met Leu Met Ser Ser
 20 25 30
 Gly Gln Arg Arg Gln Trp Glu Arg Ala Gln Ser Arg Arg Ala Phe
 35 40 45
 Gln Glu Leu Val Leu Glu Pro Ala Gln Arg Arg Ala Arg Leu Glu
 50 55 60
 Gly Leu Arg Tyr Thr Ala Val Leu Lys Gln Gln Ala Thr Gln His
 65 70 75
 Ser Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala
 80 85 90
 Ser Pro Cys Gly Ala Trp Ala Leu Arg Asp Thr Pro Ile Pro Arg
 95 100 105
 Trp Lys Leu Ser Ser Ala Glu Thr Tyr Ser Arg Met Arg Leu Lys
 110 115 120
 Leu Val Pro Asn His His Phe Asp Pro His Leu Glu Ala Ser Ala
 125 130 135
 Leu Arg Asp Asn Leu Gly Glu Val Pro Leu Thr Pro Thr Glu Glu
 140 145 150
 Ala Ser Leu Pro Leu Ala Val Thr Lys Glu Ala Lys Val Ser Thr
 155 160 165
 Pro Pro Glu Leu Leu Gln Glu Asp Gln Leu Gly Glu Asp Glu Leu
 170 175 180
 Ala Glu Leu Glu Thr Pro Met Glu Ala Ala Glu Leu Asp Glu Gln
 185 190 195
 Arg Glu Lys Leu Val Leu Ser Ala Glu Cys Gln Leu Val Thr Val
 200 205 210
 Val Ala Val Val Pro Gly Leu Leu Glu Val Thr Thr Gln Asn Val
 215 220 225
 Tyr Phe Tyr Asp Gly Ser Thr Glu Arg Val Glu Thr Glu Glu Gly
 230 235 240
 Ile Gly Tyr Asp Phe Arg Arg Pro Leu Ala Gln Leu Arg Glu Val
 245 250 255
 His Leu Arg Arg Phe Asn Leu Arg Arg Ser Ala Leu Glu Leu Phe
 260 265 270

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ile | Asp | Gln | Ala | Asn | Tyr | Phe | Leu | Asn | Phe | Pro | Cys | Lys | Val | 275 | 280 | 285 |
| Gly | Thr | Thr | Pro | Val | Ser | Ser | Pro | Ser | Gln | Thr | Pro | Arg | Pro | Gln | 290 | 295 | 300 |
| Pro | Gly | Pro | Ile | Pro | Pro | His | Thr | Gln | Val | Arg | Asn | Gln | Val | Tyr | 305 | 310 | 315 |
| Ser | Trp | Leu | Leu | Arg | Leu | Arg | Pro | Pro | Ser | Gln | Gly | Tyr | Leu | Ser | 320 | 325 | 330 |
| Ser | Arg | Ser | Pro | Gln | Glu | Met | Leu | Arg | Ala | Ser | Gly | Leu | Thr | Gln | 335 | 340 | 345 |
| Lys | Trp | Val | Gln | Arg | Glu | Ile | Ser | Asn | Phe | Glu | Tyr | Leu | Met | Gln | 350 | 355 | 360 |
| Leu | Asn | Thr | Ile | Ala | Gly | Arg | Thr | Tyr | Asn | Asp | Leu | Ser | Gln | Tyr | 365 | 370 | 375 |
| Pro | Val | Phe | Pro | Trp | Val | Leu | Gln | Asp | Tyr | Val | Ser | Pro | Thr | Leu | 380 | 385 | 390 |
| Asp | Leu | Ser | Asn | Pro | Ala | Val | Phe | Arg | Asp | Leu | Ser | Lys | Pro | Ile | 395 | 400 | 405 |
| Gly | Val | Val | Asn | Pro | Lys | His | Ala | Gln | Leu | Val | Arg | Glu | Lys | Tyr | 410 | 415 | 420 |
| Glu | Ser | Phe | Glu | Asp | Pro | Ala | Gly | Thr | Ile | Asp | Lys | Phe | His | Tyr | 425 | 430 | 435 |
| Gly | Thr | His | Tyr | Ser | Asn | Ala | Ala | Gly | Val | Met | His | Tyr | Leu | Ile | 440 | 445 | 450 |
| Arg | Val | Glu | Pro | Phe | Thr | Ser | Leu | His | Val | Gln | Leu | Gln | Ser | Gly | 455 | 460 | 465 |
| Arg | Phe | Asp | Cys | Ser | Asp | Arg | Gln | Phe | His | Ser | Val | Ala | Ala | Ala | 470 | 475 | 480 |
| Trp | Gln | Ala | Arg | Leu | Glu | Ser | Pro | Ala | Asp | Val | Lys | Glu | Leu | Ile | 485 | 490 | 495 |
| Pro | Glu | Phe | Phe | Tyr | Phe | Pro | Asp | Phe | Leu | Glu | Asn | Gln | Asn | Gly | 500 | 505 | 510 |
| Phe | Asp | Leu | Gly | Cys | Leu | Gln | Leu | Thr | Asn | Glu | Lys | Val | Gly | Asp | 515 | 520 | 525 |
| Val | Val | Leu | Pro | Pro | Trp | Ala | Ser | Ser | Pro | Glu | Asp | Phe | Ile | Gln | 530 | 535 | 540 |
| Gln | His | Arg | Gln | Ala | Leu | Glu | Ser | Glu | Tyr | Val | Ser | Ala | His | Leu | 545 | 550 | 555 |
| His | Glu | Trp | Ile | Asp | Leu | Ile | Phe | Gly | Tyr | Lys | Gln | Arg | Gly | Pro | 560 | 565 | 570 |
| Ala | Ala | Glu | Glu | Ala | Leu | Asn | Val | Phe | Tyr | Tyr | Cys | Thr | Tyr | Glu | 575 | 580 | 585 |

Ala Leu Thr Val Thr Glu Asp Phe Val Leu Leu Gly Thr Ala Gln
905 910 915

Cys Ala Leu His Ile Leu Gln Leu Asn Thr Leu Leu Pro Ala Ala
920 925 930

Pro Pro Leu Pro Met Lys Val Ala Ile Arg Ser Val Ala Val Thr
935 940 945

Lys Glu Arg Ser His Val Leu Val Gly Leu Glu Asp Gly Lys Leu
950 955 960

Ile Val Val Val Ala Gly Gln Pro Ser Glu Val Arg Ser Ser Gln
965 970 975

Phe Ala Arg Lys Leu Trp Arg Ser Ser Arg Arg Ile Ser Gln Val
980 985 990

Ser Ser Gly Glu Thr Glu Tyr Asn Pro Thr Glu Ala Arg
995 1000

<210> 34

<211> 43

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 34

tgactgcact accccgtggc aagctgttga gccagctcag ctg 43

<210> 35

<211> 1395

<212> DNA

<213> Homo sapiens

<400> 35

cggaacgcgtg ggcggacgcg tgggggctgt gagaaagtgc caataaatac 50

atcatgcaac cccacggccc accttgtgaa ctctctgtgc ccagggtgtg 100

tggtggtctt ccagggtac tcatccaaag gcctaatacca acgttctgtc 150

ttcaatctgc aaatctatgg ggtcctgggg ctcttctgga cccttaactg 200

ggtactggcc ctgggccaat gcgtcctcgc tggagccttt gcctcctctc 250

actgggcctt ccacaagccc caggacatcc ctaccttccc cttaatctct 300

gccttcaccc gcacactccg ttaccacact gggtcattgg catttggagc 350

cctcatcctg acccttgtgc agatagcccg ggtcatcttg gagtatattg 400

accacaagct cagaggagtg cagaaccctg tagcccgctg catcatgtgc 450

tgtttcaagt gctgcctctg gtgtctggaa aaatttatca agttcctaaa 500

cgcgaatgca tacatcatga tcgccatcta cggaagaat ttctgtgtct 550

cagccaaaaa tgcgttcctg ctactcatgc gaaacattgt cagggtggtc 600

gtctctggaca aagtcacaga cctgctgtgt ttctttggga agctgctggt 650

ggtcggaggc gtgggggtcc tgtccttctt tttttctcc ggtcgcatcc 700
 cggggctggg taaagacttt aagagccccc acctcaacta ttactggctg 750
 cccatcatga cctccatcct gggggcctat gtcatcgcca gcggcttctt 800
 cagcgttttc ggcattgttg tggacacgct ctcctctgc ttctgggaag 850
 acctggagcg gaacaacggc tccctggacc ggcctacta catgtccaag 900
 agccttctaa agattctggg caagaagaac gaggcgcccc cggacaacaa 950
 gaagaggaag aagtgcacgc tccggccctg atccaggact gcacccacc 1000
 cccaccgtcc agccatccaa cctcacttcg ccttacaggt ctccattttg 1050
 tggtaaaaaa aggttttagg ccaggcgccg tggctcacgc ctgtaatcca 1100
 acactttgag aggctgaggc gggcggatca cctgagtcag gagtctgaga 1150
 ccagcctggc caacatggtg aaacctccgt ctctattaaa aatacaaaaa 1200
 ttagccgaga gtggtggcat gcacctgtca tccagctac tcgggaggct 1250
 gaggcaggag aatcgcttga acccgggagg cagagggtgc agtgagccga 1300
 gatcgcgcca ctgcactcca acctgggtga cagactctgt ctccaaaaca 1350
 aaacaaacaa acaaaaagat tttattaaag atattttgtt aactc 1395

<210> 36
 <211> 321
 <212> PRT
 <213> Homo sapiens

<400> 36
 Arg Thr Arg Gly Arg Thr Arg Gly Gly Cys Glu Lys Val Pro Ile
 1 5 10 15
 Asn Thr Ser Cys Asn Pro Thr Ala His Leu Val Asn Ser Ser Cys
 20 25 30
 Pro Gly Leu Met Cys Val Phe Gln Gly Tyr Ser Ser Lys Gly Leu
 35 40 45
 Ile Gln Arg Ser Val Phe Asn Leu Gln Ile Tyr Gly Val Leu Gly
 50 55 60
 Leu Phe Trp Thr Leu Asn Trp Val Leu Ala Leu Gly Gln Cys Val
 65 70 75
 Leu Ala Gly Ala Phe Ala Ser Phe Tyr Trp Ala Phe His Lys Pro
 80 85 90
 Gln Asp Ile Pro Thr Phe Pro Leu Ile Ser Ala Phe Ile Arg Thr
 95 100 105
 Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala Leu Ile Leu
 110 115 120
 Thr Leu Val Gln Ile Ala Arg Val Ile Leu Glu Tyr Ile Asp His
 125 130 135

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Leu | Arg | Gly | Val | Gln | Asn | Pro | Val | Ala | Arg | Cys | Ile | Met | Cys | 140 | 150 |
| Cys | Phe | Lys | Cys | Cys | Leu | Trp | Cys | Leu | Glu | Lys | Phe | Ile | Lys | Phe | 155 | 165 |
| Leu | Asn | Arg | Asn | Ala | Tyr | Ile | Met | Ile | Ala | Ile | Tyr | Gly | Lys | Asn | 170 | 180 |
| Phe | Cys | Val | Ser | Ala | Lys | Asn | Ala | Phe | Met | Leu | Leu | Met | Arg | Asn | 185 | 195 |
| Ile | Val | Arg | Val | Val | Val | Leu | Asp | Lys | Val | Thr | Asp | Leu | Leu | Leu | 200 | 210 |
| Phe | Phe | Gly | Lys | Leu | Leu | Val | Val | Gly | Gly | Val | Gly | Val | Leu | Ser | 215 | 225 |
| Phe | Phe | Phe | Phe | Ser | Gly | Arg | Ile | Pro | Gly | Leu | Gly | Lys | Asp | Phe | 230 | 240 |
| Lys | Ser | Pro | His | Leu | Asn | Tyr | Tyr | Trp | Leu | Pro | Ile | Met | Thr | Ser | 245 | 255 |
| Ile | Leu | Gly | Ala | Tyr | Val | Ile | Ala | Ser | Gly | Phe | Phe | Ser | Val | Phe | 260 | 270 |
| Gly | Met | Cys | Val | Asp | Thr | Leu | Phe | Leu | Cys | Phe | Leu | Glu | Asp | Leu | 275 | 285 |
| Glu | Arg | Asn | Asn | Gly | Ser | Leu | Asp | Arg | Pro | Tyr | Tyr | Met | Ser | Lys | 290 | 300 |
| Ser | Leu | Leu | Lys | Ile | Leu | Gly | Lys | Lys | Asn | Glu | Ala | Pro | Pro | Asp | 305 | 315 |
| Asn | Lys | Lys | Arg | Lys | Lys | | | | | | | | | | 320 | |

<210> 37
 <211> 22
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 37
 tcgtgccccag gggctgatgt gc 22

<210> 38
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 38
 gtctttaccg agccccggga tgcg 24

<210> 39
 <211> 50

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 39
ggcctaattcc aacgttctgt cttcaatctg caaatctatg gggctctggg 50

<210> 40
<211> 1365
<212> DNA
<213> Homo sapiens

<400> 40
gagtcttgac cgccgccggg ctcttggtac ctcagcgga ggcagggcg 50
tccggccgcc gtggctatgt tcgtgtccga tttccgcaa gagttctacg 100
aggtgggtcca gagccagagg gtccttctct tcgtggcctc ggacgtggat 150
gctctgtgtg cgtgcaagat ccttcaggcc ttgttccagt gtgaccacgt 200
gcaatatacg ctggttccag tttctgggtg gcaagaacct gaaactgcat 250
ttcttgagca taaagaacag tttcattatt ttattctcat aaactgtgga 300
gctaattgag acctattgga tattcttcaa cctgatgaag acactatatt 350
ctttgtgtgt gactcccata ggccagtcac tgcgtgcaat gtatacaacg 400
ataccagatg caaattactc attaaacaag atgatgacct tgaagttccc 450
gcctatgaag acatcttcag ggatgaagag gaggatgaag agcattcagg 500
aaatgacagt gatgggtcag agccttctga gaagcgaca cggttagaag 550
aggagatagt ggagcaaacc atgcggagga ggcagcgcg agagtgggag 600
gcccgagaaa gagacatcct ctttgactac gacagtatg aatcatcatg 650
gacatcgcca gccatggtga tgtttgagct ggcttggatg ctgtccaagg 700
acctgaatga catgctgtgg tgggccatcg ttggactaac agaccagtgg 750
gtgcaagaca agatcactca aatgaaatac gtgactgatg ttggtgtcct 800
gcagcgccac gtttcccgcc acaaccacgg gaacgaggat gaggagaaca 850
cactctccgt ggactgcaca cgatctcctt ttgagtatga cctccgcctg 900
gtgctctacc agcactggtc cctccatgac agcctgtgca acaccagcta 950
taccgcagcc aggttcaagc tgggtgtctg gcatggacag aagcggtccc 1000
aggagtctct tgcagacatg ggtcttcccc tgaagcaggt gaagcagaag 1050
ttccaggcca tggacatctc cttgaaggag aatttgcggg aaatgattga 1100
agagtctgca aataaatttg ggatgaagga catgcgcgtg cagactttca 1150
gcattcattt tgggttcaag cacaagtctt tggccagcga cgtggtcttt 1200

gccaccatgt ctttgatgga gagccccgag aaggatggct cagggacaga 1250
 tcacttcac caggctcttg acagcctctc caggagtaac ctggacaagc 1300
 tgtaccatgg cctggaactc gccaaagaagc agctgcgagc caccacagcag 1350
 accattgccg gctgc 1365

<210> 41
 <211> 566
 <212> PRT
 <213> Homo sapiens

<400> 41
 Met Phe Val Ser Asp Phe Arg Lys Glu Phe Tyr Glu Val Val Gln
 1 5 10 15
 Ser Gln Arg Val Leu Leu Phe Val Ala Ser Asp Val Asp Ala Leu
 20 25 30
 Cys Ala Cys Lys Ile Leu Gln Ala Leu Phe Gln Cys Asp His Val
 35 40 45
 Gln Tyr Thr Leu Val Pro Val Ser Gly Trp Gln Glu Leu Glu Thr
 50 55 60
 Ala Phe Leu Glu His Lys Glu Gln Phe His Tyr Phe Ile Leu Ile
 65 70 75
 Asn Cys Gly Ala Asn Val Asp Leu Leu Asp Ile Leu Gln Pro Asp
 80 85 90
 Glu Asp Thr Ile Phe Phe Val Cys Asp Ser His Arg Pro Val Asn
 95 100 105
 Val Val Asn Val Tyr Asn Asp Thr Gln Ile Lys Leu Leu Ile Lys
 110 115 120
 Gln Asp Asp Asp Leu Glu Val Pro Ala Tyr Glu Asp Ile Phe Arg
 125 130 135
 Asp Glu Glu Glu Asp Glu Glu His Ser Gly Asn Asp Ser Asp Gly
 140 145 150
 Ser Glu Pro Ser Glu Lys Arg Thr Arg Leu Glu Glu Glu Ile Val
 155 160 165
 Glu Gln Thr Met Arg Arg Arg Gln Arg Arg Glu Trp Glu Ala Arg
 170 175 180
 Arg Arg Asp Ile Leu Phe Asp Tyr Glu Gln Tyr Glu Tyr His Gly
 185 190 195
 Thr Ser Ser Ala Met Val Met Phe Glu Leu Ala Trp Met Leu Ser
 200 205 210
 Lys Asp Leu Asn Asp Met Leu Trp Trp Ala Ile Val Gly Leu Thr
 215 220 225
 Asp Gln Trp Val Gln Asp Lys Ile Thr Gln Met Lys Tyr Val Thr
 230 235 240
 Asp Val Gly Val Leu Gln Arg His Val Ser Arg His Asn His Arg

| | | |
|-------------------------------------|---------------------|-----|
| 245 | 250 | 255 |
| Asn Glu Asp Glu Glu Asn Thr Leu Ser | Val Asp Cys Thr Arg | Ile |
| 260 | 265 | 270 |
| Ser Phe Glu Tyr Asp Leu Arg Leu Val | Leu Tyr Gln His Trp | Ser |
| 275 | 280 | 285 |
| Leu His Asp Ser Leu Cys Asn Thr Ser | Tyr Thr Ala Ala Arg | Phe |
| 290 | 295 | 300 |
| Lys Leu Trp Ser Val His Gly Gln Lys | Arg Leu Gln Glu Phe | Leu |
| 305 | 310 | 315 |
| Ala Asp Met Gly Leu Pro Leu Lys Gln | Val Lys Gln Lys Phe | Gln |
| 320 | 325 | 330 |
| Ala Met Asp Ile Ser Leu Lys Glu Asn | Leu Arg Glu Met Ile | Glu |
| 335 | 340 | 345 |
| Glu Ser Ala Asn Lys Phe Gly Met Lys | Asp Met Arg Val Gln | Thr |
| 350 | 355 | 360 |
| Phe Ser Ile His Phe Gly Phe Lys His | Lys Phe Leu Ala Ser | Asp |
| 365 | 370 | 375 |
| Val Val Phe Ala Thr Met Ser Leu Met | Glu Ser Pro Glu Lys | Asp |
| 380 | 385 | 390 |
| Gly Ser Gly Thr Asp His Phe Ile Gln | Ala Leu Asp Ser Leu | Ser |
| 395 | 400 | 405 |
| Arg Ser Asn Leu Asp Lys Leu Tyr His | Gly Leu Glu Leu Ala | Lys |
| 410 | 415 | 420 |
| Lys Gln Leu Arg Ala Thr Gln Gln Thr | Ile Ala Ser Cys Leu | Cys |
| 425 | 430 | 435 |
| Thr Asn Leu Val Ile Ser Gln Gly Pro | Phe Leu Tyr Cys Ser | Leu |
| 440 | 445 | 450 |
| Met Glu Gly Thr Pro Asp Val Met Leu | Phe Ser Arg Pro Ala | Ser |
| 455 | 460 | 465 |
| Leu Ser Leu Leu Ser Lys His Leu Leu | Lys Ser Phe Val Cys | Ser |
| 470 | 475 | 480 |
| Thr Lys Asn Arg Arg Cys Lys Leu Leu | Pro Leu Val Met Ala | Ala |
| 485 | 490 | 495 |
| Pro Leu Ser Met Glu His Gly Thr Val | Thr Val Val Gly Ile | Pro |
| 500 | 505 | 510 |
| Pro Glu Thr Asp Ser Ser Asp Arg Lys | Asn Phe Phe Gly Arg | Ala |
| 515 | 520 | 525 |
| Phe Glu Lys Ala Ala Glu Ser Thr Ser | Ser Arg Met Leu His | Asn |
| 530 | 535 | 540 |
| His Phe Asp Leu Ser Val Ile Glu Leu | Lys Ala Glu Asp Arg | Ser |
| 545 | 550 | 555 |
| Lys Phe Leu Asp Ala Leu Ile Ser Leu | Leu Ser | |

<210> 42
 <211> 380
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 44, 118, 172, 183
 <223> unknown base

<400> 42
 gtacctcagc gcgagcgcca ggcgtccggc cgcctgtggt atgntcgtgt 50
 ccgatttccg caaagagttc tacgaggtgg tccagagcca gagggtcctt 100
 ctcttcgtgg cctcggangt ggatgctctg tgtgcgtgca agatccttca 150
 ggccttggtc cagtgtgacc angtgcaata tangctgtgt ccagtttctg 200
 ggtggcaaga acttgaaact gcatttcttg agcataaaga acagtttcat 250
 tatttttatt tcataaactg tggagctaata gtagacctat tggatattct 300
 tcaacctgat gaagacacta tattctttgt gtgtgacacc cataggccag 350
 tcaatgttgt caatgtatac aacgataccc 380

<210> 43
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 43
 ttccgcaaag agttctacga ggtgg 25

<210> 44
 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 44
 attgacaaca ttgactggcc tatggg 26

<210> 45
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 45
 gttgatgtct tgtgtgcgtg caagatcctt caggccttgt tccagtgtga 50

<210> 46

<211> 3089
<212> DNA
<213> Homo sapiens

<400> 46
caggaaccct ctctttgggt ctggattggg acccctttcc agtaaccattt 50
tttctagtga accacgaagg gacgatacca gaaaacaccc tcaacccaaa 100
ggaaatagac tacagcccca attggctgac tttggctata gaaaaaagaa 150
aggaacgaaa agagacagtt ttttttggaa agctaagtct tccctttatc 200
gagtcacaaa accccccctt cttgagctat ttacagcttt taacaattga 250
gtaaagtacg ctccggctac catggtgaca gcgcacctgg gtcccgctcg 300
ggcagcgctc ctgctctttc tcctgatgtg tgagatccgt atggtggagc 350
tcacctttga cagagctgtg gccagcggct gccaacgggt ctgtgactct 400
gaggaccccc tggatcctgc ccatgtatcc tcagcctctt cctccggccg 450
ccccacgcc ctgcctgaga tcagacccta cattaatac accatcctga 500
agggtgacaa aggggaccca ggcccaatgg gcctgccagg gtacatgggc 550
agggagggtc cccaagggga gcctggccct cagggcagca agggtgacaa 600
gggggagatg ggagccccc gcgccccgtg ccagaagcgc ttcttcgctc 650
ttcagtgagg ccgcaagacg gccctgcaca gcggcgagga cttccagacg 700
ctgctcttcg aaagggtctt tgtgaacctt gatgggtgct ttgacatggc 750
gaccggccag ttgtctgctc cctgctgtgg catctacttc ttcagcctca 800
atgtgcacag ctggaattac aaggagacgt acgtgcacat tatgcataac 850
cagaaagagg ctgtcatcct gtacgcgcag ccagcgcagc gcagcatcat 900
gcagagccag agtgtgatgc tggacctggc ctacggggac cgcgtctggg 950
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ccctcgagg gctcagtttg cactgctgtg aagcaggaag gccagggagg 1150
tccccgggga cctggcattc tggggagacc ctgctcttat cttggctgcc 1200
atcatccctc ccagcctatt tctgctcctc tcttctctct tggacctatt 1250
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taaatgcaga ttctgactca gcaggtctga gtgggtccag gattctgtgt 1400
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tggagcaacc aggttctagc actttctcaa tattctagta ctttctgaac 1500
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 tgagacagag tcttgctctg ttgccaggc tagagtgcag tgggtcaatc 1600
 tcagttcact gcaacctctg cctcccggt tcaagcgatt cttctgctc 1650
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 cttgaactcc tgacttcagg tgaccaccc gcctcgccct ctcaaatgc 1800
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 attctctcat ccctccaggc ctcccgtgc tatgttctct ttacccttc 1900
 cccctcttct cttgctcagg cctgcaccac tgcaccacc gttcatttat 1950
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 agccacggcg gggagagatg tgtacatagg ttttaaagca gaccagagc 2100
 tcatgggggc ctgtgttctg ggtgttcagg tgcgtctggt cctccattac 2150
 cactgtccc ccaaggctgg tgggacgggg tccgggtggc aggggcaggt 2200
 atctcctcc cgttctcat ccacctgcc agtgcctac gttaacagca 2250
 accccagggg gccttgcca ggtcaagggt tctgtgagga gaggaccag 2300
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 cctccagctg cctcagaca ctgatgtctg tcccagggt ctctctgcc 2550
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 ctggtgtctg ctttacaac acctgcagga gaaggccac ggaagccca 2700
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 gccattggt gctcatgag actctgggc tgaggtgcc cgggggtga 2900
 tctctgtgct tcacagcca gggagccgtg gctccatggc cagatgacgg 2950
 aaacagggtc tgaccaagt ccagggaagac ctgtgtata aaccacctg 3000
 cctgatcctg cccctgctg accccgccac gccctgcct ccagcatgat 3050

taaagaatgc tgtctcctct tggaaaaaaaa aaaaaaaaa 3089

<210> 47
<211> 259
<212> PRT
<213> Homo sapiens

<220>
<221> Signal Peptide
<222> 1-20
<223> Signal Peptide

<220>
<221> N-glycosylation Site
<222> 72-75
<223> N-glycosylation Site

<220>
<221> Clq Domain Proteins
<222> 144-178, 78-111, 84-117
<223> Clq Domain Proteins

<400> 47
Met Val Thr Ala Ala Leu Gly Pro Val Trp Ala Ala Leu Leu Leu
1 5 10 15
Phe Leu Leu Met Cys Glu Ile Arg Met Val Glu Leu Thr Phe Asp
20 25 30
Arg Ala Val Ala Ser Gly Cys Gln Arg Cys Cys Asp Ser Glu Asp
35 40 45
Pro Leu Asp Pro Ala His Val Ser Ser Ala Ser Ser Ser Gly Arg
50 55 60
Pro His Ala Leu Pro Glu Ile Arg Pro Tyr Ile Asn Ile Thr Ile
65 70 75
Leu Lys Gly Asp Lys Gly Asp Pro Gly Pro Met Gly Leu Pro Gly
80 85 90
Tyr Met Gly Arg Glu Gly Pro Gln Gly Glu Pro Gly Pro Gln Gly
95 100 105
Ser Lys Gly Asp Lys Gly Glu Met Gly Ser Pro Gly Ala Pro Cys
110 115 120
Gln Lys Arg Phe Phe Ala Phe Ser Val Gly Arg Lys Thr Ala Leu
125 130 135
His Ser Gly Glu Asp Phe Gln Thr Leu Leu Phe Glu Arg Val Phe
140 145 150
Val Asn Leu Asp Gly Cys Phe Asp Met Ala Thr Gly Gln Phe Ala
155 160 165
Ala Pro Leu Arg Gly Ile Tyr Phe Phe Ser Leu Asn Val His Ser
170 175 180
Trp Asn Tyr Lys Glu Thr Tyr Val His Ile Met His Asn Gln Lys
185 190 195
Glu Ala Val Ile Leu Tyr Ala Gln Pro Ser Glu Arg Ser Ile Met

| | | | | | |
|---|-----|--|-----|--|-----|
| | 200 | | 205 | | 210 |
| Gln Ser Gln Ser Val Met Leu Asp Leu Ala Tyr Gly Asp Arg Val | | | | | |
| | 215 | | 220 | | 225 |
| Trp Val Arg Leu Phe Lys Arg Gln Arg Glu Asn Ala Ile Tyr Ser | | | | | |
| | 230 | | 235 | | 240 |
| Asn Asp Phe Asp Thr Tyr Ile Thr Phe Ser Gly His Leu Ile Lys | | | | | |
| | 245 | | 250 | | 255 |
| Ala Glu Asp Asp | | | | | |

<210> 48
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 48
 ccagacgctg ctcttcgaaa gggtc 25

<210> 49
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 49
 ggtcccccga ggccaggtcc agc 23

<210> 50
 <211> 50
 <212> DNA
 <213> Artificial sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 50
 ctactcttc agcctcaatg tgcacagctg gaattacaag gagacgtacg 50

<210> 51
 <211> 2768
 <212> DNA
 <213> Homo sapiens

<400> 51
 actcgaacgc agttgcttcg ggaccaggga cccctcggg ccgaccgcg 50
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 ccgcctcccg ggacagaaga tgtgctccag ggtccctctg ctgctgccg 150
 tgctcctgct actggccctg gggcctgggg tgcagggtg cccatccggc 200
 tgccagtgca gccagccaca gacagtcttc tgcactgccc gccaggggac 250

cacggtgccc cgagacgtgc caccgcacac ggtggggctg tacgtctttg 300
 agaacggcat caccatgtgc gacgcaggca gctttgccgg cctgccgggc 350
 ctgcagctcc tggacctgtc acagaaccag atcgccagcc tggccagcgg 400
 ggtcttccag ccaactcgcca acctcagcaa cctggacctg acggccaaca 450
 ggctgcatga aatcaccaat gagaccttcc gtggcctgcg gcgcctcgag 500
 cgctcttacc tgggcaagaa ccgcattccg cacatocagc ctggtgcctt 550
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<210> 52
 <211> 673
 <212> PRT
 <213> Homo sapiens

<400> 52
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 Ser Gln Pro Gln Thr Val Phe Cys Thr Ala Arg Gln Gly Thr Thr
 35 40 45
 Val Pro Arg Asp Val Pro Pro Asp Thr Val Gly Leu Tyr Val Phe
 50 55 60
 Glu Asn Gly Ile Thr Met Leu Asp Ala Gly Ser Phe Ala Gly Leu
 65 70 75
 Pro Gly Leu Gln Leu Leu Asp Leu Ser Gln Asn Gln Ile Ala Ser
 80 85 90
 Leu Pro Ser Gly Val Phe Gln Pro Leu Ala Asn Leu Ser Asn Leu

| | | |
|-----------------|---|-----|
| 95 | 100 | 105 |
| Asp Leu Thr Ala | Asn Arg Leu His Glu Ile Thr Asn Glu Thr Phe | |
| 110 | 115 | 120 |
| Arg Gly Leu Arg | Arg Leu Glu Arg Leu Tyr Leu Gly Lys Asn Arg | |
| 125 | 130 | 135 |
| Ile Arg His Ile | Gln Pro Gly Ala Phe Asp Thr Leu Asp Arg Leu | |
| 140 | 145 | 150 |
| Leu Glu Leu Lys | Leu Gln Asp Asn Glu Leu Arg Ala Leu Pro Pro | |
| 155 | 160 | 165 |
| Leu Arg Leu Pro | Arg Leu Leu Leu Leu Asp Leu Ser His Asn Ser | |
| 170 | 175 | 180 |
| Leu Leu Ala Leu | Glu Pro Gly Ile Leu Asp Thr Ala Asn Val Glu | |
| 185 | 190 | 195 |
| Ala Leu Arg Leu | Ala Gly Leu Gly Leu Gln Gln Leu Asp Glu Gly | |
| 200 | 205 | 210 |
| Leu Phe Ser Arg | Leu Arg Asn Leu His Asp Leu Asp Val Ser Asp | |
| 215 | 220 | 225 |
| Asn Gln Leu Glu | Arg Val Pro Pro Val Ile Arg Gly Leu Arg Gly | |
| 230 | 235 | 240 |
| Leu Thr Arg Leu | Arg Leu Ala Gly Asn Thr Arg Ile Ala Gln Leu | |
| 245 | 250 | 255 |
| Arg Pro Glu Asp | Leu Ala Gly Leu Ala Ala Leu Gln Glu Leu Asp | |
| 260 | 265 | 270 |
| Val Ser Asn Leu | Ser Leu Gln Ala Leu Pro Gly Asp Leu Ser Gly | |
| 275 | 280 | 285 |
| Leu Phe Pro Arg | Leu Arg Leu Leu Ala Ala Ala Arg Asn Pro Phe | |
| 290 | 295 | 300 |
| Asn Cys Val Cys | Pro Leu Ser Trp Phe Gly Pro Trp Val Arg Glu | |
| 305 | 310 | 315 |
| Ser His Val Thr | Leu Ala Ser Pro Glu Glu Thr Arg Cys His Phe | |
| 320 | 325 | 330 |
| Pro Pro Lys Asn | Ala Gly Arg Leu Leu Leu Glu Leu Asp Tyr Ala | |
| 335 | 340 | 345 |
| Asp Phe Gly Cys | Pro Ala Thr Thr Thr Thr Ala Thr Val Pro Thr | |
| 350 | 355 | 360 |
| Thr Arg Pro Val | Val Arg Glu Pro Thr Ala Leu Ser Ser Ser Leu | |
| 365 | 370 | 375 |
| Ala Pro Thr Trp | Leu Ser Pro Thr Ala Pro Ala Thr Glu Ala Pro | |
| 380 | 385 | 390 |
| Ser Pro Pro Ser | Thr Ala Pro Pro Thr Val Gly Pro Val Pro Gln | |
| 395 | 400 | 405 |
| Pro Gln Asp Cys | Pro Pro Ser Thr Cys Leu Asn Gly Gly Thr Cys | |

<210> 54
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 54
ttgctcacat ccagctcctg cagg 24

<210> 55
<211> 41
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 55
tggatgttgt ccagacaacc agctggagct gtatccgagg c 41

<210> 56
<211> 3462
<212> DNA
<213> Homo sapiens

<400> 56
gaatcatcca cgcacctgca gctctgctga gagagtgcaa gccgtggggg 50
ttttgagctc atcttcatca ttcatatgag gaaataagtg gtaaaatcct 100
tggaaataca atgagactca tcagaaacat ttacatatatt tgtagtattg 150
ttatgacagc agaggggtgat gctccagagc tgccaagaaga aagggaactg 200
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cccagccaca acgacaactg atttatocta taacctoctt tttaactcc 300
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cataacagaa ttcaacagct ggaatctcaa acccttgaat tcaacaagga 400
gttaagatat ttagatttgt ctaataacag actgaagagt gtaacttggt 450
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 acagggagca tttgatttct atgtttgtga tttctataat gtttgaattg 3400
 tttagaatga atctgtattt cttttataag tagaaaaaaa ataaagatag 3450
 tttttacagc ct 3462

<210> 57
 <211> 811
 <212> PRT
 <213> Homo sapiens

<400> 57
 Met Arg Leu Ile Arg Asn Ile Tyr Ile Phe Cys Ser Ile Val Met 15
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 Thr Ala Glu Gly Asp Ala Pro Glu Leu Pro Glu Glu Arg Glu Leu 30
 20 25 30
 Met Thr Asn Cys Ser Asn Met Ser Leu Arg Lys Val Pro Ala Asp 45
 35 40 45
 Leu Thr Pro Ala Thr Thr Thr Leu Asp Leu Ser Tyr Asn Leu Leu 60
 50 55 60
 Phe Gln Leu Gln Ser Ser Asp Phe His Ser Val Ser Lys Leu Arg 75
 65 70 75
 Val Leu Ile Leu Cys His Asn Arg Ile Gln Gln Leu Asp Leu Lys 90
 80 85 90

Thr Phe Glu Phe Asn Lys Glu Leu Arg Tyr Leu Asp Leu Ser Asn
 95 100 105
 Asn Arg Leu Lys Ser Val Thr Trp Tyr Leu Leu Ala Gly Leu Arg
 110 115 120
 Tyr Leu Asp Leu Ser Phe Asn Asp Phe Asp Thr Met Pro Ile Cys
 125 130 135
 Glu Glu Ala Gly Asn Met Ser His Leu Glu Ile Leu Gly Leu Ser
 140 145 150
 Gly Ala Lys Ile Gln Lys Ser Asp Phe Gln Lys Ile Ala His Leu
 155 160 165
 His Leu Asn Thr Val Phe Leu Gly Phe Arg Thr Leu Pro His Tyr
 170 175 180
 Glu Glu Gly Ser Leu Pro Ile Leu Asn Thr Thr Lys Leu His Ile
 185 190 195
 Val Leu Pro Met Asp Thr Asn Phe Trp Val Leu Leu Arg Asp Gly
 200 205 210
 Ile Lys Thr Ser Lys Ile Leu Glu Met Thr Asn Ile Asp Gly Lys
 215 220 225
 Ser Gln Phe Val Ser Tyr Glu Met Gln Arg Asn Leu Ser Leu Glu
 230 235 240
 Asn Ala Lys Thr Ser Val Leu Leu Leu Asn Lys Val Asp Leu Leu
 245 250 255
 Trp Asp Asp Leu Phe Leu Ile Leu Gln Phe Val Trp His Thr Ser
 260 265 270
 Val Glu His Phe Gln Ile Arg Asn Val Thr Phe Gly Gly Lys Ala
 275 280 285
 Tyr Leu Asp His Asn Ser Phe Asp Tyr Ser Asn Thr Val Met Arg
 290 295 300
 Thr Ile Lys Leu Glu His Val His Phe Arg Val Phe Tyr Ile Gln
 305 310 315
 Gln Asp Lys Ile Tyr Leu Leu Leu Thr Lys Met Asp Ile Glu Asn
 320 325 330
 Leu Thr Ile Ser Asn Ala Gln Met Pro His Met Leu Phe Pro Asn
 335 340 345
 Tyr Pro Thr Lys Phe Gln Tyr Leu Asn Phe Ala Asn Asn Ile Leu
 350 355 360
 Thr Asp Glu Leu Phe Lys Arg Thr Ile Gln Leu Pro His Leu Lys
 365 370 375
 Thr Leu Ile Leu Asn Gly Asn Lys Leu Glu Thr Leu Ser Leu Val
 380 385 390
 Ser Cys Phe Ala Asn Asn Thr Pro Leu Glu His Leu Asp Leu Ser
 395 400 405

| | | | |
|---------------------|---------------------|---------------------|-----|
| Gln Asn Leu Leu | Gln His Lys Asn Asp | Glu Asn Cys Ser Trp | Pro |
| 410 | 415 | 420 | |
| Glu Thr Val Val | Asn Met Asn Leu Ser | Tyr Asn Lys Leu Ser | Asp |
| 425 | 430 | 435 | |
| Ser Val Phe Arg Cys | Leu Pro Lys Ser | Ile Gln Ile Leu Asp | Leu |
| 440 | 445 | 450 | |
| Asn Asn Asn Gln | Ile Gln Thr Val Pro | Lys Glu Thr Ile His | Leu |
| 455 | 460 | 465 | |
| Met Ala Leu Arg | Glu Leu Asn Ile Ala | Phe Asn Phe Leu Thr | Asp |
| 470 | 475 | 480 | |
| Leu Pro Gly Cys | Ser His Phe Ser Arg | Leu Ser Val Leu Asn | Ile |
| 485 | 490 | 495 | |
| Glu Met Asn Phe | Ile Leu Ser Pro Ser | Leu Asp Phe Val Gln | Ser |
| 500 | 505 | 510 | |
| Cys Gln Glu Val | Lys Thr Leu Asn Ala | Gly Arg Asn Pro Phe | Arg |
| 515 | 520 | 525 | |
| Cys Thr Cys Glu | Leu Lys Asn Phe Ile | Gln Leu Glu Thr Tyr | Ser |
| 530 | 535 | 540 | |
| Glu Val Met Met | Val Gly Trp Ser Asp | Ser Tyr Thr Cys Glu | Tyr |
| 545 | 550 | 555 | |
| Pro Leu Asn Leu | Arg Gly Thr Arg Leu | Lys Asp Val His Leu | His |
| 560 | 565 | 570 | |
| Glu Leu Ser Cys | Asn Thr Ala Leu Leu | Ile Val Thr Ile Val | Val |
| 575 | 580 | 585 | |
| Ile Met Leu Val | Leu Gly Leu Ala Val | Ala Phe Cys Cys Leu | His |
| 590 | 595 | 600 | |
| Phe Asp Leu Pro | Trp Tyr Leu Arg Met | Leu Gly Gln Cys Thr | Gln |
| 605 | 610 | 615 | |
| Thr Trp His Arg | Val Arg Lys Thr Thr | Gln Glu Gln Leu Lys | Arg |
| 620 | 625 | 630 | |
| Asn Val Arg Phe | His Ala Phe Ile Ser | Tyr Ser Glu His Asp | Ser |
| 635 | 640 | 645 | |
| Leu Trp Val Lys | Asn Glu Leu Ile Pro | Asn Leu Glu Lys Glu | Asp |
| 650 | 655 | 660 | |
| Gly Ser Ile Leu | Ile Cys Leu Tyr Glu | Ser Tyr Phe Asp Pro | Gly |
| 665 | 670 | 675 | |
| Lys Ser Ile Ser | Glu Asn Ile Val Ser | Phe Ile Glu Lys Ser | Tyr |
| 680 | 685 | 690 | |
| Lys Ser Ile Phe | Val Leu Ser Pro Asn | Phe Val Gln Asn Glu | Trp |
| 695 | 700 | 705 | |
| Cys His Tyr Glu | Phe Tyr Phe Ala His | His Asn Leu Phe His | Glu |
| 710 | 715 | 720 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Ser | Asp | His | Ile | Ile | Leu | Ile | Leu | Leu | Glu | Pro | Ile | Pro | Phe |
| | | | | 725 | | | | | | 730 | | | | 735 |
| Tyr | Cys | Ile | Pro | Thr | Arg | Tyr | His | Lys | Leu | Lys | Ala | Leu | Leu | Glu |
| | | | | 740 | | | | | | 745 | | | | 750 |
| Lys | Lys | Ala | Tyr | Leu | Glu | Trp | Pro | Lys | Asp | Arg | Arg | Lys | Cys | Gly |
| | | | | 755 | | | | | | 760 | | | | 765 |
| Leu | Phe | Trp | Ala | Asn | Leu | Arg | Ala | Ala | Ile | Asn | Val | Asn | Val | Leu |
| | | | | 770 | | | | | | 775 | | | | 780 |
| Ala | Thr | Arg | Glu | Met | Tyr | Glu | Leu | Gln | Thr | Phe | Thr | Glu | Leu | Asn |
| | | | | 785 | | | | | | 790 | | | | 795 |
| Glu | Glu | Ser | Arg | Gly | Ser | Thr | Ile | Ser | Leu | Met | Arg | Thr | Asp | Cys |
| | | | | 800 | | | | | | 805 | | | | 810 |

Leu

<210> 58
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 58
 tcccaccag tatcataaac tgaa 24

<210> 59
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 59
 ttatagacaa tctgttctca tcagaga 27

<210> 60
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 60
 aaaaagcata cttggaatg cccaaggata ggtgtaaatg 40

<210> 61
 <211> 3772
 <212> DNA
 <213> Homo sapiens

<400> 61
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 cctcggaggg gtcgccggga aaggaggga agaaggaagg gcggggccgg 100

ccccctgcg cccgccccgc gcctctgcgc gccctgtcc gccccggccc 150
agccccagccc agccccgcgg gccggtcaca cgcgcagcca gccggccccc 200
tcccgcgccc aagcgcgcgg ctctgctgtg ccctgcgccc ttgccccgcg 250
ccagcttctg cgcgccgcgc ccgcccgcg ccccccgtga cgtgaccct 300
gccctggggc cggggcgagg caggcatgtc ccgccgggg accgtaacc 350
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ccaccactga tgacctggat tttaaagcacc acaattataa ggaaatgcgc 1300
cagttgatga aagttgtgaa tgaaatgtgt cccaatatca ccagaattta 1350
caacattgga aaaagccacc agggcctgaa gctgtatgct gtggagatct 1400
cagatcaccc tggggagcat gaagtcgggt agcccgagtt ccactacatc 1450
gcgggggccc acggcaatga ggtgctgggc cgggagctgc tgctgctgct 1500
ggtgcagttc gtgtgtcagg agtacttggc ccggaatgcg cgcacgtgcc 1550
acctggtgga ggagacgcgg attcacgtcc tcccctccct caaccccgat 1600
ggctacgaga aggcctacga agggggctcg gagctgggg gctggtccct 1650
gggacgctgg acccacgatg gaattgacat caacaacaac ttctctgatt 1700

gtccctgctg atccagtagc cctggagggt cccaggtag ggagagccag 3350
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 cagtttggga agaattattg aattatcttg caagaaaaaa gtatgtctca 3650
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 aataagcaa atggtagac ccttaaaaaa aaaaaaaaaa aaaaaaaaaa 3750
 aaaaaaaaaa aaaaaaaaaa aa 3772

<210> 62
 <211> 756
 <212> PRT
 <213> Homo sapiens

<400> 62
 Met Ser Arg Pro Gly Thr Ala Thr Pro Ala Leu Ala Leu Val Leu
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 Leu Ala Val Thr Leu Ala Gly Val Gly Ala Gln Gly Ala Ala Leu
 20 25 30
 Glu Asp Pro Asp Tyr Tyr Gly Gln Glu Ile Trp Ser Arg Glu Pro
 35 40 45
 Tyr Tyr Ala Arg Pro Glu Pro Glu Leu Glu Thr Phe Ser Pro Pro
 50 55 60
 Leu Pro Ala Gly Pro Gly Glu Glu Trp Glu Arg Arg Pro Gln Glu
 65 70 75
 Pro Arg Pro Pro Lys Arg Ala Thr Lys Pro Lys Lys Ala Pro Lys
 80 85 90
 Arg Glu Lys Ser Ala Pro Glu Pro Pro Pro Pro Gly Lys His Ser
 95 100 105
 Asn Lys Lys Val Met Arg Thr Lys Ser Ser Glu Lys Ala Ala Asn
 110 115 120
 Asp Asp His Ser Val Arg Val Ala Arg Glu Asp Val Arg Glu Ser
 125 130 135
 Cys Pro Pro Leu Gly Leu Glu Thr Leu Lys Ile Thr Asp Phe Gln
 140 145 150
 Leu His Ala Ser Thr Val Lys Arg Tyr Gly Leu Gly Ala His Arg
 155 160 165
 Gly Arg Leu Asn Ile Gln Ala Gly Ile Asn Glu Asn Asp Phe Tyr
 170 175 180
 Asp Gly Ala Trp Cys Ala Gly Arg Asn Asp Leu Gln Gln Trp Ile

[illegible]

| | | |
|---|-----|-----|
| 500 | 505 | 510 |
| Val Leu Gly Gly Asn Leu Gln Gly Gly Glu Leu Val Val Ala Tyr | 515 | 525 |
| Pro Tyr Asp Leu Val Arg Ser Pro Trp Lys Thr Gln Glu His Thr | 530 | 540 |
| Pro Thr Pro Asp Asp His Val Phe Arg Trp Leu Ala Tyr Ser Tyr | 545 | 555 |
| Ala Ser Thr His Arg Leu Met Thr Asp Ala Arg Arg Arg Val Cys | 560 | 570 |
| His Thr Glu Asp Phe Gln Lys Glu Glu Gly Thr Val Asn Gly Ala | 575 | 585 |
| Ser Trp His Thr Val Ala Gly Ser Leu Asn Asp Phe Ser Tyr Leu | 590 | 600 |
| His Thr Asn Cys Phe Glu Leu Ser Ile Tyr Val Gly Cys Asp Lys | 605 | 615 |
| Tyr Pro His Glu Ser Gln Leu Pro Glu Glu Trp Glu Asn Asn Arg | 620 | 630 |
| Glu Ser Leu Ile Val Phe Met Glu Gln Val His Arg Gly Ile Lys | 635 | 645 |
| Gly Leu Val Arg Asp Ser His Gly Lys Gly Ile Pro Asn Ala Ile | 650 | 660 |
| Ile Ser Val Glu Gly Ile Asn His Asp Ile Arg Thr Ala Asn Asp | 665 | 675 |
| Gly Asp Tyr Trp Arg Leu Leu Asn Pro Gly Glu Tyr Val Val Thr | 680 | 690 |
| Ala Lys Ala Glu Gly Phe Thr Ala Ser Thr Lys Asn Cys Met Val | 695 | 705 |
| Gly Tyr Asp Met Gly Ala Thr Arg Cys Asp Phe Thr Leu Ser Lys | 710 | 720 |
| Thr Asn Met Ala Arg Ile Arg Glu Ile Met Glu Lys Phe Gly Lys | 725 | 735 |
| Gln Pro Val Ser Leu Pro Ala Arg Arg Leu Lys Leu Arg Gly Arg | 740 | 750 |
| Lys Arg Arg Gln Arg Gly | 755 | |

<210> 63
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 63
 gttctcaatg agctacccgt cccc 24

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 tattgtatat aaatgctcga gagtgcgga tcacctatgg ccaaggtagt 1000
 ggtacagcag tttaacaaa caacatgtac gtcaacatgt acaacaccgg 1050
 gaattattgcc agagttaacc tgaccaccaa cactgattgt gtgactcaaa 1100
 ctctccctaa tgctgcctat aataaccgct ttcatatgc taatgttgc 1150
 tggcaagata ttgactttgc tgtggatgag aatggattgt gggttattta 1200
 ttcaactgaa gccagcactg gtaacatggt gattagtaaa ctcaatgaca 1250
 ccacacttca ggtgctaacc acttggtata ccaagcagta taaacctct 1300
 gcttctaacg ccttcattgt atgtggggtt ctgtatgcc cccgtactat 1350
 gaacaccaga acagaagaga ttttttacta ttatgacaca aacacagggg 1400
 aagagggcaa actagacatt gtaatgcata agatgcagga aaaagtgcag 1450
 agcattaact ataacccttt tgaccagaaa ctttatgtct ataacgatgg 1500
 ttaccttctg aattatgac tttctgtctt gcagaagccc cagtaagctg 1550
 tttaggagtt aggggtgaaag agaaaatggt tgttgaaaaa atagtcttct 1600
 ccacttactt agatatctgc aggggtgtct aaaagtgtgt tcattttgca 1650
 gcaattttta ggtgcatagt tctaccacac tagagatcta ggacatttgt 1700
 cttgatttgg tgagttctct tgggaatcat ctgcctcttc aggcgcattt 1750
 tgcaataaag tctgtctagg gtgggattgt cagaggtcta ggggcactgt 1800
 gggcctagtg aagcctactg tgaggaggct tctactagaag ctttaatta 1850
 ggaattaagg aacttaaac tcagtatggc gtctagggat tctttgtaca 1900
 ggaaatattg ccaatgact agtcctcatc catgtagcac cactaattct 1950
 tccatgcctg gaagaaacct ggggacttag ttaggtagat taatatctgg 2000
 agctcctcga gggaccaaat ctccaacttt tttttccct cactagcacc 2050
 tggaatgatg ctttgatgtt ggcagataag taaatttggc atgcttatat 2100
 attctacatc tgtaaagtgc tgagttttat ggagagaggc ctttttatgc 2150
 attaaattgt acatggcaaa taaatccag aaggatctgt agatgaggca 2200
 cctgcttttt cttttctctc attgtccacc ttactaaaag tcagtagaat 2250
 ctctacatcc ataacttctt tccaaaggca gctcagaaga ttagaaccag 2300
 acttactaac caattccacc cccaccaaac ccccttctac tgcctacttt 2350
 aaaaaaatta atagttttct atggaactga totaagatta gaaaaattaa 2400
 ttttctttta ttctattatg gacttttatt tacatgactc taagactata 2450
 agaaaatctg atggcagtga caaagtgcata gcattttatt ttatctaata 2500

aagaccttgg agcatatgtg caacttatga gtgtatcagt tgttgcatgt 2550
aatttttgc tttgtttaag cctggaactt gtaagaaaat gaaaatttaa 2600
tttttttttc taggacgagc tatagaaaag ctattgagag tatctagtta 2650
atcagtgacg tagttggaaa ccttgctggt gtatgtgatg tgcttctgtg 2700
cttttgaatg accttatcat ctagtctttg tctatttttc ctttgatggt 2750
caagtcctag tctataggat tggcagttta aatgctttac tccccctttt 2800
aaaataaatg attaaaatgt gctttgaaaa aaaaaaaaaa aaaaaaaaaa 2850
aaaa 2854

<210> 67
<211> 510
<212> PRT
<213> Homo sapiens

<400> 67
Met Arg Pro Gly Leu Ser Phe Leu Leu Ala Leu Leu Phe Phe Leu
1 5 10 15
Gly Gln Ala Ala Gly Asp Leu Gly Asp Val Gly Pro Pro Ile Pro
20 25 30
Ser Pro Gly Phe Ser Ser Phe Pro Gly Val Asp Ser Ser Ser Ser
35 40 45
Phe Ser Ser Ser Ser Arg Ser Gly Ser Ser Ser Ser Arg Ser Leu
50 55 60
Gly Ser Gly Gly Ser Val Ser Gln Leu Phe Ser Asn Phe Thr Gly
65 70 75
Ser Val Asp Asp Arg Gly Thr Cys Gln Cys Ser Val Ser Leu Pro
80 85 90
Asp Thr Thr Phe Pro Val Asp Arg Val Glu Arg Leu Glu Phe Thr
95 100 105
Ala His Val Leu Ser Gln Lys Phe Glu Lys Glu Leu Ser Lys Val
110 115 120
Arg Glu Tyr Val Gln Leu Ile Ser Val Tyr Glu Lys Lys Leu Leu
125 130 135
Asn Leu Thr Val Arg Ile Asp Ile Met Glu Lys Asp Thr Ile Ser
140 145 150
Tyr Thr Glu Leu Asp Phe Glu Leu Ile Lys Val Glu Val Lys Glu
155 160 165
Met Glu Lys Leu Val Ile Gln Leu Lys Glu Ser Phe Gly Gly Ser
170 175 180
Ser Glu Ile Val Asp Gln Leu Glu Val Glu Ile Arg Asn Met Thr
185 190 195
Leu Leu Val Glu Lys Leu Glu Thr Leu Asp Lys Asn Asn Val Leu
200 205 210

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Arg | Arg | Glu | Ile | Val | Ala | Leu | Lys | Thr | Lys | Leu | Lys | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Cys | Glu | Ala | Ser | Lys | Asp | Gln | Asn | Thr | Pro | Val | Val | His | Pro | Pro |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Pro | Thr | Pro | Gly | Ser | Cys | Gly | His | Gly | Gly | Val | Val | Asn | Ile | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Pro | Ser | Val | Val | Gln | Leu | Asn | Trp | Arg | Gly | Phe | Ser | Tyr | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Tyr | Gly | Ala | Trp | Gly | Arg | Asp | Tyr | Ser | Pro | Gln | His | Pro | Asn | Lys |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Gly | Leu | Tyr | Trp | Val | Ala | Pro | Leu | Asn | Thr | Asp | Gly | Arg | Leu | Leu |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Glu | Tyr | Tyr | Arg | Leu | Tyr | Asn | Thr | Leu | Asp | Asp | Leu | Leu | Leu | Tyr |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Ile | Asn | Ala | Arg | Glu | Leu | Arg | Ile | Thr | Tyr | Gly | Gln | Gly | Ser | Gly |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Thr | Ala | Val | Tyr | Asn | Asn | Asn | Met | Tyr | Val | Asn | Met | Tyr | Asn | Thr |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Gly | Asn | Ile | Ala | Arg | Val | Asn | Leu | Thr | Thr | Asn | Thr | Ile | Ala | Val |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Thr | Gln | Thr | Leu | Pro | Asn | Ala | Ala | Tyr | Asn | Asn | Arg | Phe | Ser | Tyr |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Ala | Asn | Val | Ala | Trp | Gln | Asp | Ile | Asp | Phe | Ala | Val | Asp | Glu | Asn |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Gly | Leu | Trp | Val | Ile | Tyr | Ser | Thr | Glu | Ala | Ser | Thr | Gly | Asn | Met |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Val | Ile | Ser | Lys | Leu | Asn | Asp | Thr | Thr | Leu | Gln | Val | Leu | Asn | Thr |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Trp | Tyr | Thr | Lys | Gln | Tyr | Lys | Pro | Ser | Ala | Ser | Asn | Ala | Phe | Met |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Val | Cys | Gly | Val | Leu | Tyr | Ala | Thr | Arg | Thr | Met | Asn | Thr | Arg | Thr |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Glu | Glu | Ile | Phe | Tyr | Tyr | Tyr | Asp | Thr | Asn | Thr | Gly | Lys | Glu | Gly |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Lys | Leu | Asp | Ile | Val | Met | His | Lys | Met | Gln | Glu | Lys | Val | Gln | Ser |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Ile | Asn | Tyr | Asn | Pro | Phe | Asp | Gln | Lys | Leu | Tyr | Val | Tyr | Asn | Asp |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gly | Tyr | Leu | Leu | Asn | Tyr | Asp | Leu | Ser | Val | Leu | Gln | Lys | Pro | Gln |
| | | | | 500 | | | | | 505 | | | | | 510 |

<210> 68
 <211> 410
 <212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 206, 217, 387

<223> unknown base

<400> 68

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ggtgaacatc agcaaacctg ctgtggttca gctcaactgg agagggtttt 150
cttatctata tgggtgcttg ggtagggtatt actctcccca gcatccaaac 200
aaaggngatg attggngggc gccattgaat acagatggga gactgttggg 250
gtattataga ctgtacaacc cactggatga ttgctattg tatataaatg 300
ctcgagagtt gcggatcacc tatggccaag gtagtggtag agcagtttac 350
aacaacaaca tgtacgtcaa catgtacaac accgggnata ttgccagagt 400
taacctgacc 410

<210> 69

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 69

agctgtggtc atggtggtgt ggtg 24

<210> 70

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 70

ctaccttggc cataggtgat ccgc 24

<210> 71

<211> 42

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 71

catcagcaaa ccgtctgtgg ttcagctcaa ctggagaggg tt 42

<210> 72

<211> 3127

<212> DNA

<213> Homo sapiens

<400> 72
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 tcttgtctgt atccgctgct cttgtgacgt tgtggagatg gggagcgtcc 100
 tggggcctgtg ctccatggcg agctggatag catgttttgg tggagtgcc 150
 ccgtgtttgc tatgccgatg ctgtcctagt ggaacaact ccaactgtaac 200
 tagattgac tatgcacttt tcttgcttgt tggagtatgt gtagcttgtg 250
 taatgttgat accaggaatg gaagaacaac tgaataagat tcctggattt 300
 tgtgagaatg agaaagggtg tgtcccttgt aacattttgg ttggctataa 350
 agctgtatat cgtttgtgct ttggtttggc tatgttctat ctctctctct 400
 ctttactaat gatcaaagtg aagagtagca gtgacctag agctgcagtg 450
 cacaatggat tttggttctt taaatttgct gcagcaattg caattattat 500
 tggggcattc ttcattccag aaggaacttt tacaactgtg tggttttatg 550
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 attgattttg cacattcatg gaatgaatcg tgggttgaaa aaatggaaga 650
 agggaaactg agatgttggg atgcagcctt gttatcagct acagctctga 700
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 catccagcca gttgttcaga aaacaaggcg ttcacagtgt tcaacatgct 800
 cctctgcggt ggtgcttctg taatgtctat actgccaaaa atccaagaat 850
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 atgtatttga catggtcagc tatgaccaat gaaccagaaa caaattgcaa 950
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 cagttgtctg aaaaaactta taaggtttta cccttgatac ggaatttaca 1950
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 cggactactaa ttgaataacg agtaataaat cttacttggg tagagatggc 2050
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 taatgaagct tttaaaatct acaatttctt ctttaaaaat atttattaat 3000
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 tagacattgt attccacaat ttggaatggc tgtgttttct ctctaaataa 3100
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<210> 73
 <211> 453
 <212> PRT
 <213> Homo sapiens

<400> 73

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ser | Val | Leu | Gly | Leu | Cys | Ser | Met | Ala | Ser | Trp | Ile | Pro |
| 1 | | | 5 | | | | | | 10 | | | | | 15 |
| Cys | Leu | Cys | Gly | Ser | Ala | Pro | Cys | Leu | Leu | Cys | Arg | Cys | Cys | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Ser | Gly | Asn | Asn | Ser | Thr | Val | Thr | Arg | Leu | Ile | Tyr | Ala | Leu | Phe |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Leu | Leu | Val | Gly | Val | Cys | Val | Ala | Cys | Val | Met | Leu | Ile | Pro | Gly |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Met | Glu | Glu | Gln | Leu | Asn | Lys | Ile | Pro | Gly | Phe | Cys | Glu | Asn | Glu |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Lys | Gly | Val | Val | Pro | Cys | Asn | Ile | Leu | Val | Gly | Tyr | Lys | Ala | Val |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Tyr | Arg | Leu | Cys | Phe | Gly | Leu | Ala | Met | Phe | Tyr | Leu | Leu | Leu | Ser |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Leu | Leu | Met | Ile | Lys | Val | Lys | Ser | Ser | Ser | Asp | Pro | Arg | Ala | Ala |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Val | His | Asn | Gly | Phe | Trp | Phe | Phe | Lys | Phe | Ala | Ala | Ala | Ile | Ala |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Ile | Ile | Ile | Gly | Ala | Phe | Phe | Ile | Pro | Glu | Gly | Thr | Phe | Thr | Thr |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Val | Trp | Phe | Tyr | Val | Gly | Met | Ala | Gly | Ala | Phe | Cys | Phe | Ile | Leu |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Ile | Gln | Leu | Val | Leu | Leu | Ile | Asp | Phe | Ala | His | Ser | Trp | Asn | Glu |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Ser | Trp | Val | Glu | Lys | Met | Glu | Glu | Gly | Asn | Ser | Arg | Cys | Trp | Tyr |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Ala | Ala | Leu | Leu | Ser | Ala | Thr | Ala | Leu | Asn | Tyr | Leu | Leu | Ser | Leu |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Val | Ala | Ile | Val | Leu | Phe | Phe | Val | Tyr | Tyr | Thr | His | Pro | Ala | Ser |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Cys | Ser | Glu | Asn | Lys | Ala | Phe | Ile | Ser | Val | Asn | Met | Leu | Leu | Cys |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Val | Gly | Ala | Ser | Val | Met | Ser | Ile | Leu | Pro | Lys | Ile | Gln | Glu | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Gln | Pro | Arg | Ser | Gly | Leu | Leu | Gln | Ser | Ser | Val | Ile | Thr | Val | Tyr |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Thr | Met | Tyr | Leu | Thr | Trp | Ser | Ala | Met | Thr | Asn | Glu | Pro | Glu | Thr |
| | | | 275 | | | | | | 280 | | | | | 285 |

Asn Cys Asn Pro Ser Leu Leu Ser Ile Ile Gly Tyr Asn Thr Thr
 290 295 300
 Ser Thr Val Pro Lys Glu Gly Gln Ser Val Gln Trp Trp His Ala
 305 310 315
 Gln Gly Ile Ile Gly Leu Ile Leu Phe Leu Leu Cys Val Phe Tyr
 320 325 330
 Ser Ser Ile Arg Thr Ser Asn Asn Ser Gln Val Asn Lys Leu Thr
 335 340 345
 Leu Thr Ser Asp Glu Ser Thr Leu Ile Glu Asp Gly Gly Ala Arg
 350 355 360 365
 Ser Asp Gly Ser Leu Glu Asp Gly Asp Val His Arg Ala Val
 365 370 375
 Asp Asn Glu Arg Asp Gly Val Thr Tyr Ser Tyr Ser Phe Phe His
 380 385 390
 Phe Met Leu Phe Leu Ala Ser Leu Tyr Ile Met Met Thr Leu Thr
 395 400 405
 Asn Trp Ser Arg Tyr Glu Pro Ser Arg Glu Met Lys Ser Gln Trp
 410 415 420
 Thr Ala Val Trp Val Lys Ile Ser Ser Ser Trp Ile Gly Ile Val
 425 430 435
 Leu Tyr Val Trp Thr Leu Val Ala Pro Leu Val Leu Thr Asn Arg
 440 445 450
 Asp Phe Asp

<210> 74
 <211> 480
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 48, 163
 <223> unknown base

<400> 74
 gcgagaaaaga agctgtctcc atcttgtctg tatcccgctg cttcttngga 50
 cgttgtggag atggggagcg tccctggggc tgtgtccat ggcgagctgg 100
 ataccatgtt tgtgtggaag tgcccgctgt ttgctatgcc gatgtgtcc 150
 tagtggaaac aantccactg taactagatt gatctatgca cttttcttgc 200
 ttgttggagt atgtgtagct tgtgtaattg tgataccagg aatggaagaa 250
 caactgaata agattcctgg attttgtgag aatgagaaaag gtgttgtccc 300
 ttgtaacatt ttggttggct ataaagctgt atatcgtttg tgcttttggtt 350
 tggctatgtt ctatctctct ctctctttac taatgatcaa agtgaagagt 400

agcagtgtatc cttagctgtc agtgcaaat ggatttttgt tctttaaatt 450
tgctgcagca attgcaatta ttattggggc 480

<210> 75
<211> 438
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 32, 65, 92, 121, 142, 154, 170, 293, 315, 323
<223> unknown base

<400> 75
gttattgtga actttgtgga gatgggaggt cntggggctg tgttccatgg 50
cgagctggat accangtttg tgtggaagtg ccccggtgtt gntatgcga 100
tgctgtccta gtggaacaa ntccactgta attagattga tntatgcact 150
ttnttgtctt gttggagtan gtgtagcttg tgtaattgtg ataccaggaa 200
tggaagaaca actgaataag attcctggat tttgtgagaa tgagaaggt 250
gttgccctt gtaacatttt gggtggctat aaagctgtat atngttttgt 300
ctttggttg gctangttct atnttcttct ctctttaact atgatcaaag 350
tgaagagttag cagtgtatct agagctgcag tgcacaatgg attttggtt 400
tttaaatttg ctgcagcaat tgcaattatt attggggc 438

<210> 76
<211> 473
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 48
<223> unknown base

<400> 76
aagaagctgt ctccatcttg tctgtatccg ctgctcttgt gaaagtnttg 50
gagatgggga ggtctcttg ggttgtgtc catggcgagc tggataccat 100
gtttgtgtg aagtgcccg tgtttgctat gccgatgtg tctatgtgga 150
aacaactcca ctgtaactag attgatctat gcacttttct tgcttgttg 200
agtatgtga gotttgttaa tgttgatacc aggaatggaa gaacaactga 250
ataagattcc tggattttgt gagaatgaga aaggtgttgt cccttgtaac 300
attttggttg gctataaagc tgtatatcgt ttgtgotttg gtttggtat 350
gttctatctt ctctctctt tactaatgat caaagtgaag agtagcagt 400
atcctagagc tgcagtgcac aatggatttt gttctttaa atttgctgca 450
gcaattgcaa ttattattgg ggc 473

<210> 77
<211> 666
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 21, 111
<223> unknown base

<400> 77
gctgtcctta gtggaacaa ntccaacttg taacttggat tgatctatgc 50
actttttcct tgcttgttgg agtatgtgta gctttgtgta atgttgttcc 100
caggattgga ngaacaactg aataagattc ctggattttt gtgagaatga 150
gaaagggtgtt gtccccttgt aacatttttg gttggctata aagctgtata 200
tcgttttgtc tttggttttg ctatgttcta tcttcttctc tctttactaa 250
tgatcaaagt gaagagtagc agtgatccta gagctgcagt gcacaatgga 300
ttttggttct ttaaatttgc tgcagcaatt gcaattatta ttggggcatt 350
cttcattcca gaaggaaactt ttacaactgt gtggttttat gtaggcattg 400
cagggtgcctt ttgttttcac tcacataaac tagtcttact tattgatttt 450
gcacattcat ggaatgaatc gtgggttgaa aaaatggaag aagggaactc 500
gagatgttgg tatgcagcct tgttatcagc tacagctctg aattatctgc 550
tgtctttagt tgctatcgtc ctgtttctttg tctactaac tcacccagcc 600
agttgttcag aaaacaaggc gttcatcagt gtcaacatgc tcctctgcgt 650
tgggtgcttct gtaatg 666

<210> 78
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 78
atgtttgtgt ggaagtgcc cg 22

<210> 79
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 79
gtcaacatgc tcctctgc 18

<210> 80
<211> 26

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 80
aatccattgt gcactgcagc tctagg 26

<210> 81
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 81
gagcatgcc ccaactggact gac 23

<210> 82
<211> 54
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 82
gccgatgctg tcttagtgga aacaactcca ctgtaactag attgatctat 50
gcac 54

<210> 83
<211> 3906
<212> DNA
<213> Homo sapiens

<400> 83
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gcggcgcgcg cgggcctctc caatggcaaa tgtgtgtggc tggaggcgag 100
cgcgaggctt tcggcaaagg cagtgcagtg tttgcagacc ggggcgagtc 150
ctgtgaaagc agataaaaga aaacatttat taactgtgca ttacgagggg 200
agcgcgccgc cggggctgtc gcaactcccc cggaacattt ggctccctcc 250
agctccgaga gaggagaaga agaaagcgga aaagaggcag attcaogtcg 300
tttccagcca agtggaactg atcgatggcc ctctgaatt tatcaogata 350
tttgatttat tagcgatgcc cctcggtttg tgtgttacgc acacacagct 400
gcacacaagg ctctggctcg ctccctccc tcgtttccag ctctcgggag 450
aatcccaaat ctgtttcaac tctccgcga gggcgagcag gagcgagagt 500
gtgtcgaatc tgcgagtga gagggacgag ggaagagaaa caaagccaca 550
gagcgaactt gagactccc catcccaaaa gaagcaccag atcagcaaaa 600

aaagaagatg ggccccccga gcctcgtgct gtgcttgctg tccgcaactg 650
 tgttctccct gctgggtgga agctcggcct tctgtgcga ccaccgcctg 700
 aaaggcagggt ttcagaggga ccgcaggaac atccgcccc aatcatcct 750
 ggtgctgacg gacgaccagg atgtggagct gggttccatg cagggtgatga 800
 acaagaccgg cgcgcatcat gagcaggggc gggcgccact catcaacgcc 850
 ttctgtacca caccatgtg ctgcccctca cgtctctcca tctcactgg 900
 caagtacgtc cacaaccaca acacctacac caacaatgag aactgctcct 950
 cgccctcctg gcaggcacag cagcagagcc gcacctttgc cgtgtacctc 1000
 aatagcactg gctaccggac agctttcttc gggagatgc ttaatgaata 1050
 caacggctcc tacgtgccac ccggctggaa ggagtgggtc ggactcctta 1100
 aaaactcccg cttttataac tacacgctgt gtcggaacgg ggtgaagag 1150
 aagcagcgct ccgactactc caaggattac ctacacagacc tcataccaa 1200
 tgacagcgtg agcttcttcc gcacgtccaa gaagatgtac ccgcacaggc 1250
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 gagctacaac tacgcgcca acccggaaca aactggatc atgcgtaca 1400
 cggggcccat gaagccatc cacatggaat tcaccaacat gctccagcgg 1450
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 ccgcccacca cgggtaccac atcgccaggt ttggcctggt gaaagggaaa 1600
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 gacgggaaat ccatcctcaa gctgctggac acggagcggc cggatgaatcg 1800
 gtttactctg aaaaagaaga tgagggtctg gcgggactcc tctcttggtg 1850
 agagaggcaa gctgctacac aagagagaca atgacaaggt ggacgcccag 1900
 gaggagaact ttctgcccac gtaccagcgt gtgaaggacc tgtgtcagcg 1950
 tgctgagtag cagacggcgt gtgagcagct gggacagaag tggcagtggt 2000
 tggaggagcg cacggggaag ctgaagctgc ataagtcaa gggcccatg 2050
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 gcagggcagc gaggcctgca cctgtgacag cggggactac aagctcagcc 2150
 tggccggacg ccggaaaaaa ctcttcaaga agaagtacaa gccacgctat 2200

gtccgcagtc gctccatccg ctcaagtggcc atcgaggtgg acggcagggt 2250
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 tggacctgta caagtccctg caggcctgga aagaccacaa gctgcacatc 2500
 gaccacgaga ttgaaccct gcagaacaaa attaagaacc tgagggaagt 2550
 ccgaggtcac ctgaagaaaa agcggccaga agaattgtac tgtcacaaaa 2600
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 aaccagcact ggcaacggc gcccttctgg aactggggc ctttctgtgc 2850
 ctgcaccagc gccacaata acacgtactg gtgcatgagg accatcaatg 2900
 agactcacia tttctcttc tgtgaatttg caactggctt cctagagtac 2950
 tttgatctca acacagacc ctaccagctg atgaatgcag tgaacacact 3000
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 gatggaggaa gctatgagca atacaggcag tttoagctgc gaaagtggcc 3150
 agaaatgaag agacctctt ccaaactcact gggacaactg tgggaaggct 3200
 gggaaggtta agaaaacaa gaggtggacc tccaaaaaca tagaggcatc 3250
 acctgactgc acaggcaatg aaaaaccatg tgggtgattt ccagcagacc 3300
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 ctacaaaagg aaaacggaga gagcgagcga gagagatttc cttggaaatt 3550
 tctoccaaag gcgaaagtca ttggaatttt taaatcatag gggaaaagca 3600
 gtctgttctt aaatcctctt attottttgg tttgtcacia agaaggaact 3650
 aagaagcagg acagaggcaa cgtggagagg ctgaaaacag tgcagagacg 3700
 tttgacaatg agtcagtagc acaaaagaga tgacatttac ctagcactat 3750
 aaacctggtt tgctctgaa gaaactgcct tcattgtata tatgtgacta 3800

tttacatgta atcaacatgg gaacttttag gggaacctaa taagaaatcc 3850
 caattttcag gagtgggtgt gtcaataaac gctctgtggc cagtgtaaaa 3900
 gaaaaa 3906

<210> 84
 <211> 867
 <212> PRT
 <213> Homo sapiens

<400> 84
 Met Gly Pro Pro Ser Leu Val Leu Cys Leu Leu Ser Ala Thr Val
 1 5 10 15
 Phe Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg
 20 25 30
 Leu Lys Gly Arg Phe Gln Arg Asp Arg Arg Asn Ile Arg Pro Asn
 35 40 45
 Ile Ile Leu Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser
 50 55 60
 Met Gln Val Met Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly
 65 70 75
 Ala His Phe Ile Asn Ala Phe Val Thr Thr Pro Met Cys Cys Pro
 80 85 90
 Ser Arg Ser Ser Ile Leu Thr Gly Lys Tyr Val His Asn His Asn
 95 100 105
 Thr Tyr Thr Asn Asn Glu Asn Cys Ser Ser Pro Ser Trp Gln Ala
 110 115 120
 Gln His Glu Ser Arg Thr Phe Ala Val Tyr Leu Asn Ser Thr Gly
 125 130 135
 Tyr Arg Thr Ala Phe Phe Gly Lys Tyr Leu Asn Glu Tyr Asn Gly
 140 145 150
 Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp Val Gly Leu Leu Lys
 155 160 165
 Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg Asn Gly Val Lys
 170 175 180
 Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu Thr Asp Leu
 185 190 195
 Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys Lys Met
 200 205 210
 Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala Pro
 215 220 225
 His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro
 230 235 240
 Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn
 245 250 255

| | | | | | |
|---------------------|---------------------|---------------------|-----|-----|-----|
| Pro Asp Lys His Trp | Ile Met Arg Tyr Thr | Gly Pro Met Lys Pro | 260 | 265 | 270 |
| Ile His Met Glu Phe | Thr Asn Met Leu Gln | Arg Lys Arg Leu Gln | 275 | 280 | 285 |
| Thr Leu Met Ser Val | Asp Asp Ser Met Glu | Thr Ile Tyr Asn Met | 290 | 295 | 300 |
| Leu Val Glu Thr Gly | Glu Leu Asp Asn Thr | Tyr Ile Val Tyr Thr | 305 | 310 | 315 |
| Ala Asp His Gly Tyr | His Ile Gly Gln Phe | Gly Leu Val Lys Gly | 320 | 325 | 330 |
| Lys Ser Met Pro Tyr | Glu Phe Asp Ile Arg | Val Pro Phe Tyr Val | 335 | 340 | 345 |
| Arg Gly Pro Asn Val | Glu Ala Gly Cys Leu | Asn Pro His Ile Val | 350 | 355 | 360 |
| Leu Asn Ile Asp Leu | Ala Pro Thr Ile Leu | Asp Ile Ala Gly Leu | 365 | 370 | 375 |
| Asp Ile Pro Ala Asp | Met Asp Gly Lys Ser | Ile Leu Lys Leu Leu | 380 | 385 | 390 |
| Asp Thr Glu Arg Pro | Val Asn Arg Phe His | Leu Lys Lys Lys Met | 395 | 400 | 405 |
| Arg Val Trp Arg Asp | Ser Phe Leu Val Glu | Arg Gly Lys Leu Leu | 410 | 415 | 420 |
| His Lys Arg Asp Asn | Asp Lys Val Asp Ala | Gln Glu Glu Asn Phe | 425 | 430 | 435 |
| Leu Pro Lys Tyr Gln | Arg Val Lys Asp Leu | Cys Gln Arg Ala Glu | 440 | 445 | 450 |
| Tyr Gln Thr Ala Cys | Glu Gln Leu Gly Gln | Lys Trp Gln Cys Val | 455 | 460 | 465 |
| Glu Asp Ala Thr Gly | Lys Leu Lys Leu His | Lys Cys Lys Gly Pro | 470 | 475 | 480 |
| Met Arg Leu Gly Gly | Ser Arg Ala Leu Ser | Asn Leu Val Pro Lys | 485 | 490 | 495 |
| Tyr Tyr Gly Gln Gly | Ser Glu Ala Cys Thr | Cys Asp Ser Gly Asp | 500 | 505 | 510 |
| Tyr Lys Leu Ser Leu | Ala Gly Arg Arg Lys | Lys Leu Phe Lys Lys | 515 | 520 | 525 |
| Lys Tyr Lys Ala Ser | Tyr Val Arg Ser Arg | Ser Ile Arg Ser Val | 530 | 535 | 540 |
| Ala Ile Glu Val Asp | Gly Arg Val Tyr His | Val Gly Leu Gly Asp | 545 | 550 | 555 |
| Ala Ala Gln Pro Arg | Asn Leu Thr Lys Arg | His Trp Pro Gly Ala | 560 | 565 | 570 |

Pro Glu Asp Gln Asp Asp Lys Asp Gly Gly Asp Phe Ser Gly Thr
 575 580 585
 Gly Gly Leu Pro Asp Tyr Ser Ala Ala Asn Pro Ile Lys Val Thr
 590 595 600
 His Arg Cys Tyr Ile Leu Glu Asn Asp Thr Val Gln Cys Asp Leu
 605 610 615
 Asp Leu Tyr Lys Ser Leu Gln Ala Trp Lys Asp His Lys Leu His
 620 625 630
 Ile Asp His Glu Ile Glu Thr Leu Gln Asn Lys Ile Lys Asn Leu
 635 640 645
 Arg Glu Val Arg Gly His Leu Lys Lys Lys Arg Pro Glu Glu Cys
 650 655 660
 Asp Cys His Lys Ile Ser Tyr His Thr Gln His Lys Gly Arg Leu
 665 670 675
 Lys His Arg Gly Ser Ser Leu His Pro Phe Arg Lys Gly Leu Gln
 680 685 690
 Glu Lys Asp Lys Val Trp Leu Leu Arg Glu Gln Lys Arg Lys Lys
 695 700 705
 Lys Leu Arg Lys Leu Leu Lys Arg Leu Gln Asn Asn Asp Thr Cys
 710 715 720
 Ser Met Pro Gly Leu Thr Cys Phe Thr His Asp Asn Gln His Trp
 725 730 735
 Gln Thr Ala Pro Phe Trp Thr Leu Gly Pro Phe Cys Ala Cys Thr
 740 745 750
 Ser Ala Asn Asn Asn Thr Tyr Trp Cys Met Arg Thr Ile Asn Glu
 755 760 765
 Thr His Asn Phe Leu Phe Cys Glu Phe Ala Thr Gly Phe Leu Glu
 770 775 780
 Tyr Phe Asp Leu Asn Thr Asp Pro Tyr Gln Leu Met Asn Ala Val
 785 790 795
 Asn Thr Leu Asp Arg Asp Val Leu Asn Gln Leu His Val Gln Leu
 800 805 810
 Met Glu Leu Arg Ser Cys Lys Gly Tyr Lys Gln Cys Asn Pro Arg
 815 820 825
 Thr Arg Asn Met Asp Leu Asp Gly Gly Ser Tyr Glu Gln Tyr Arg
 830 835 840
 Gln Phe Gln Arg Arg Lys Trp Pro Glu Met Lys Arg Pro Ser Ser
 845 850 855
 Lys Ser Leu Gly Gln Leu Trp Glu Gly Trp Glu Gly
 860 865

<210> 85
 <211> 19
 <212> DNA

<213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 85
 gaagccggct gtctgaatc 19
 <210> 86
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 86
 ggccagctat ctccgcag 18
 <210> 87
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 87
 aagggcctgc aagagaag 18
 <210> 88
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 88
 cactgggaca actgtggg 18
 <210> 89
 <211> 18
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 89
 cagaggcaac gtggagag 18
 <210> 90
 <211> 21
 <212> DNA
 <213> Artificial Sequence
 <220>
 <223> Synthetic oligonucleotide probe
 <400> 90
 aagtattgtc atacagtgtt c 21

atgccccagt gtactatggc agcagagaat ggaggaacac tgggtctgca 650
 gtgtggaag gtttggggag tggagagcaa ggtgtgcttt tcggggctgg 700
 acagcccgtc ttgtgacagt gactcccagt gagccccaga aatgacaagc 750
 gtgtcttggc agagccagca cacaagtgga tgtgaagtgc cegtcttgac 800
 ctctcatca ggtgctgca ggcctctggc gggcagggca ctgggagagg 850
 ccctgagaat gtccttttgg tttggagaag gcagtgtgag gctgcacagt 900
 caattcatcg gtgccttagt ccaagaaaaa aaaaaccact aagaagcttt 950
 aaaaaaaaaa aaaaaaaaaa a 971

<210> 95
 <211> 115
 <212> PRT
 <213> Homo sapiens

<400> 95
 Met Leu Gly Leu Leu Gly Ser Thr Ala Leu Val Gly Trp Ile Thr
 1 5 10 15
 Gly Ala Ala Val Ala Val Leu Leu Leu Leu Leu Leu Ala Thr
 20 25 30
 Cys Leu Phe His Gly Arg Gln Asp Cys Asp Val Glu Arg Asn Arg
 35 40 45
 Thr Ala Ala Gly Gly Asn Arg Val Arg Arg Ala Gln Pro Trp Pro
 50 55 60
 Phe Arg Arg Arg Gly His Leu Gly Ile Phe His His His Arg His
 65 70 75
 Pro Gly His Val Ser His Val Pro Asn Val Gly Leu His His His
 80 85 90
 His His Pro Arg His Thr Pro His His Leu His His His His His
 95 100 105
 Pro His Arg His His Pro Arg His Ala Arg
 110 115

<210> 96
 <211> 1312
 <212> DNA
 <213> Homo sapiens

<400> 96
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 tcggacctgc tactactggg cctgattggg ggccctgactc tcttactgct 100
 gctgacgctg ctggcctttg ccgggtactc agggctactg gctgggggtg 150
 aagtgagtgc tgggtcaccc ccacccgca acgtcactgt ggcctacaag 200
 ttccacatgg ggctctatgg tgagactggg cggtcttttc ctgagagctg 250
 cagcatctct cccaagctcc gtcctatcgc tgtctactat gacaaccccc 300

Ser Ile Ala Val Tyr Tyr Asp Asn Pro His Met Val Pro Pro Asp
 80 90
 Lys Cys Arg Cys Ala Val Gly Ser Ile Leu Ser Glu Gly Glu Glu
 95 100 105
 Ser Pro Ser Pro Glu Leu Ile Asp Leu Tyr Gln Lys Phe Gly Phe
 110 115 120
 Lys Val Phe Ser Phe Pro Ala Pro Ser His Val Val Thr Ala Thr
 125 130 135
 Phe Pro Tyr Thr Thr Ile Leu Ser Ile Trp Leu Ala Thr Arg Arg
 140 145 150
 Val His Pro Ala Leu Asp Thr Tyr Ile Lys Glu Arg Lys Leu Cys
 155 160 165
 Ala Tyr Pro Arg Leu Glu Ile Tyr Gln Glu Asp Gln Ile His Phe
 170 175 180
 Met Cys Pro Leu Ala Arg Gln Gly Asp Phe Tyr Val Pro Glu Met
 185 190 195
 Lys Glu Thr Glu Trp Lys Trp Arg Gly Leu Val Glu Ala Ile Asp
 200 205 210
 Thr Gln Val Asp Gly Thr Gly Ala Asp Thr Met Ser Asp Thr Ser
 215 220 225
 Ser Val Ser Leu Glu Val Ser Pro Gly Ser Arg Glu Thr Ser Ala
 230 235 240
 Ala Thr Leu Ser Pro Gly Ala Ser Ser Arg Gly Trp Asp Asp Gly
 245 250 255
 Asp Thr Arg Ser Glu His Ser Tyr Ser Glu Ser Gly Ala Ser Gly
 260 265 270
 Ser Ser Phe Glu Glu Leu Asp Leu Glu Gly Glu Gly Pro Leu Gly
 275 280 285
 Glu Ser Arg Leu Asp Pro Gly Thr Glu Pro Leu Gly Thr Thr Lys
 290 295 300
 Trp Leu Trp Glu Pro Thr Ala Pro Glu Lys Gly Lys Glu
 305 310

<210> 98
 <211> 725
 <212> DNA
 <213> Homo sapiens

<400> 98
 ccgcgggaac gctgtccttg ctgccgccac ccgaacagcc tgtcctgggtg 50
 ccccggtcc ctgccccgcg ccagtcctatg accctgcgcc cctcactcct 100
 cccgtccat ctgctgctgc tgctgctgct cagtgcggcg gtgtgccggg 150
 ctgaggtcgg gctcgaaacc gaaagtccc tccggaccct ccaagtggag 200
 accctgggtg agccccaga accatgtgcc gagcccgctg cttttggaga 250

cacgcttcac atacactaca cggaagcctt ggtagatgga cgtattattg 300
 acacctccct gaccagagac cctctggta tagaacttgg ccaaaagcag 350
 gtgattccag gtctggagca gactcttctc gacatgtgtg tgggagagaa 400
 gcgaaggcca atcattcctt ctcaattggc ctatggaaaa cggggatttc 450
 caccatctgt ccagcggat gcagtgtgtc agtatgacgt ggagctgatt 500
 gcaactatcc gagccaacta ctggctaagg ctggtgaagg gcattttgcc 550
 tctggtaggg atggccatgg tgccagccct cctgggcctc attgggtatc 600
 acctatacag aaaggccaat agaccocaaag tctccaaaaa gaagctcaag 650
 gaagagaaac gaaacaagag caaaaagaaa taataaataa taaattttaa 700
 aaaaacttaa aaaaaaaaaa aaaaa 725

<210> 99
 <211> 201
 <212> PRT
 <213> Homo sapiens

<400> 99
 Met Thr Leu Arg Pro Ser Leu Leu Pro Leu His Leu Leu Leu Leu
 1 5 10 15
 Leu Leu Leu Ser Ala Ala Val Cys Arg Ala Glu Ala Gly Leu Glu
 20 25 30
 Thr Glu Ser Pro Val Arg Thr Leu Gln Val Glu Thr Leu Val Glu
 35 40 45
 Pro Pro Glu Pro Cys Ala Glu Pro Ala Ala Phe Gly Asp Thr Leu
 50 55 60
 His Ile His Tyr Thr Gly Ser Leu Val Asp Gly Arg Ile Ile Asp
 65 70 75
 Thr Ser Leu Thr Arg Asp Pro Leu Val Ile Glu Leu Gly Gln Lys
 80 85 90
 Gln Val Ile Pro Gly Leu Glu Gln Ser Leu Leu Asp Met Cys Val
 95 100 105
 Gly Glu Lys Arg Arg Ala Ile Ile Pro Ser His Leu Ala Tyr Gly
 110 115 120
 Lys Arg Gly Phe Pro Pro Ser Val Pro Ala Asp Ala Val Val Gln
 125 130 135
 Tyr Asp Val Glu Leu Ile Ala Leu Ile Arg Ala Asn Tyr Trp Leu
 140 145 150
 Lys Leu Val Lys Gly Ile Leu Pro Leu Val Gly Met Ala Met Val
 155 160 165
 Pro Ala Leu Leu Gly Leu Ile Gly Tyr His Leu Tyr Arg Lys Ala
 170 175 180
 Asn Arg Pro Lys Val Ser Lys Lys Lys Leu Lys Glu Glu Lys Arg

Asn Lys Ser Lys Lys Lys
200

<210> 100
<211> 705
<212> DNA
<213> Homo sapiens

<400> 100
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cgctccatct gctgctgctg ctgctgctca gtgcggcggt gtgccgggct 150
gagggtgggc tcgaaccga aagtcgccgc cggaccctcc aagtggagac 200
cctggtggag cccccagaac catgtgccga gcccgctgct ttggagaca 250
cgcttcacat acactacacg ggaagcttgg tagatggacg tattattgac 300
acctccctga ccagagaccc tctggttata gaacttgccc aaaagcaggt 350
gattccaggt ctggagcaga gtcttctcga catgtgtgtg ggagagaagc 400
gaagggcaat cattccttct cacttggcct atggaaaacg gggatttcca 450
ccatctgtcc cagcggatgc agtggtgcag tatgacgtgg agctgattgc 500
actaatccga gccaaactact ggctaaagct ggtgaaggcg attttgcctc 550
tggtagggat ggccatggtg ccaccctcct gggcctcatt gggatatcacc 600
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gagaaacgaa acaagagcaa aaagaaataa taaataataa attttaaaaa 700
actta 705

<210> 101
<211> 543
<212> DNA
<213> Homo sapiens

<400> 101
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gaaccatgtg ccgagccgcg tgcttttga gacacgcttc acatacacta 100
cacgggaagc ttggtagatg gacgtattat tgacacotcc ctgaccagag 150
accctctggt tatagaactt ggccaaaagc aggtgattcc aggtctggag 200
cagagtcttc tcgacatgtg tgtgggagag aagcgaaggc caatcattcc 250
ttctcaottg gcctatggaa aacggggatt tccaccatct gtcccagcgg 300
atgcagtggt gcagtatgac gtggagctga ttgcactaat ccgagccaac 350
tactggctaa agctggtgaa gggcattttg cctctggtag ggatggccat 400

gggtgccagcc ctcttgggcc tcatitgggta tcacctatac agaaaggcca 450
 atagacccaa agtctccaaa aagaagctca aggaagagaa acgaacaacg 500
 agcaaaaaga aataataaat aataaatit aaanaactta aaa 543

<210> 102
 <211> 1316
 <212> DNA
 <213> Homo sapiens

<400> 102
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 aaatcggggg agtgaggcgg gccggcgcgg cgcgacaccg ggctccggaa 100
 ccactgcacg acggggcttg actgacctga aaaaaatgtc tggattttcta 150
 gagggcttga gatgctcaga atgcattgac tggggggaaa agcgcataac 200
 tattgtctcc attgtgctg gtgtactatt ttttacaggc tggaggatta 250
 tcatagatgc agctgttatt tatcccacca tgaaagattt caaccactca 300
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 agtatcgaa ggacaagtcc gaggtgatag ttacagttaa ggttgtctgg 400
 gtcaaacagg tgctcgcat tggcttttcg ttggtttcat gttggccttt 450
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 atggatttgt caatgtaagt atttgtcata tctgaggctc aaaccaccaa 950
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 tgtcccttcc atgggaaggt ctcccgctgt gcctctcatt ccaagggcag 1250
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tccacatcca ccaactg 1316

<210> 103

<211> 157

<212> PRT

<213> Homo sapiens

<400> 103

Met Ser Gly Phe Leu Glu Gly Leu Arg Cys Ser Glu Cys Ile Asp
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Trp Gly Glu Lys Arg Asn Thr Ile Ala Ser Ile Ala Ala Gly Val
20 25 30

Leu Phe Phe Thr Gly Trp Trp Ile Ile Ile Asp Ala Ala Val Ile
35 40 45

Tyr Pro Thr Met Lys Asp Phe Asn His Ser Tyr His Ala Cys Gly
50 55 60

Val Ile Ala Thr Ile Ala Phe Leu Met Ile Asn Ala Val Ser Asn
65 70 75

Gly Gln Val Arg Gly Asp Ser Tyr Ser Glu Gly Cys Leu Gly Gln
80 85 90

Thr Gly Ala Arg Ile Trp Leu Phe Val Gly Phe Met Leu Ala Phe
95 100 105

Gly Ser Leu Ile Ala Ser Met Trp Ile Leu Phe Gly Gly Tyr Val
110 115 120

Ala Lys Glu Lys Asp Ile Val Tyr Pro Gly Ile Ala Val Phe Phe
125 130 135

Gln Asn Ala Phe Ile Phe Phe Gly Gly Leu Val Phe Lys Phe Gly
140 145 150

Arg Thr Glu Asp Leu Trp Gln
155

<210> 104

<211> 545

<212> DNA

<213> Homo sapiens

<400> 104

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tggatttcta gagggttga gatgctcaga atgcattgac tggggggaaa 150

agcgcaatac tattgcttcc attgctgctg gtgtactatt ttttacaggc 200

tgggtgatta toatagatgc agctgttatt tatccacca tgaagattt 250

caaccactca taccatgcct gtgggtgtat agcaaccata goccctccta 300

tgattaatgc agtatgaat ggacaagtc gaggtgatag ttacagtga 350

ggttgtctgg gtcaaacagg tgctcgatt tggcttttcg ttggtttcat 400

gttgcccttt ggaatctctga ttgcattctat gtggattctt tttggaggtt 450
 atgttgctaa agaaaaagac atagtataacc ctggaattgc tgtatttttc 500
 cagaatgcct tcattctttt tggagggctg gtttttaagt ttggc 545

<210> 105
 <211> 490
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 31, 39, 108, 145, 179, 219, 412, 479
 <223> unknown base

<400> 105
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 agaatgcatt actgggggaa aagcgcaaat actattgctt ccattgctgc 100
 tgggtanta tttttacag gctgggtgat tatcatagat gcagntgtta 150
 tttatccac catgaaagat ttcaaccant cataccatgc ctgtggtgtt 200
 atagcaacca tagccttctt aatgattaat gcagtatcga atggacaagt 250
 ccgaggtgat agttacagtg aagggtgttt gggtaaaca ggtgctcgca 300
 tttgctctt cgttggttc atgttgcct ttgatctct gattgcattc 350
 atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 400
 ccctggaatt gntgtatttt tccagaatgc ctcatcttt tttggagggc 450
 tggtttttaa gtttggccgc actgaagant tatggcagtg 490

<210> 106
 <211> 466
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 26, 38, 81, 115, 207, 329, 380, 446, 449
 <223> unknown base

<400> 106
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 aatgtttgga ttttttagagg gcttgagatg ntcagaatgc attgactggg 100
 ggaaaagcgc aatantattg ctttccattg ctgctggtgt actatttttt 150
 acaggggtgt ggattatcat agatgcagct gttatttacc ccacatgaa 200
 agatttnaac cactcatacc atgcctgttg tgttatagca accatagcct 250
 tcctaattgat taatgcagta tcgaatggac aagtccgagg tgatagttac 300
 agtgaaggtt gtttgggtga aacaggtgnt cgcatttggc ttttcgttgg 350
 tttcatgttg gcctttggat ttctgattgn attctatgcg gattcttctt 400

ggaggttatg ttgctaaaga aaaagacata gtataccctg gaattncntnt 450
atttttccag aatgcc 466

<210> 107
<211> 377
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 52, 67, 70, 78, 105, 144, 150, 209, 266, 268, 282, 310, 331, 356
<223> unknown base

<400> 107
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tcataccatg cctgtggtgt tatagcaacc atagccttcc taatgattaa 200
tgcagtatng aatggacaag tccgaggtga tagttacagt gaaggtgtgt 250
tgggtcaaac aggtgntngc atttggttt tngttggttt catgttggtcc 300
tttgatctn tgattgcatt tatgtggatt ntttttgag gttatgttgc 350
taaaagnaaaa gacatagtat accctgt 377

<210> 108
<211> 552
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 12, 25, 65, 130, 437, 537
<223> unknown base

<400> 108
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ggactgacct gaaaaaaatg tttgatttn tagagggtt gagatgctca 150
gaatgcattg actgggggga aaagcgcaat actattgctt ccattgctgc 200
tggtgtacta ttttttacag gctggtggat tatcatagat gcagctgtta 250
tttatcccat catgaaagat ttcaaccact cataccatgc ctgtgtgttt 300
atagcaacca tagccttcct aatgattaat gcagtatcga atggacaagt 350
ccgaggtgat agttacagtg aaggttgtct gggtcaaaaca ggtgctcgca 400
tttggttttt cgttggtttc atgttggtct ttggatntct gattgcatct 450
atgtggattc tttttggagg ttatgttgct aaagaaaaag acatagtata 500
ccctggaatt gctgtatttt tccagaatgc ctcatnttt tttggaggggc 550

tg 552

<210> 109
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 109
gggtggatgg tactgctgca tcc 23

<210> 110
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 110
tgtgtgctg tgggaaatca gatgtg 26

<210> 111
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 111
gtgtctggag gctgtggccg ttttgttttc ttgggctaaa atcggg 46

<210> 112
<211> 3004
<212> DNA
<213> Homo sapiens

<400> 112
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tgctggccgt cctctgcaaa gtttacttgg gactattctc tggcagctcc 100
ccgaatcctt tctccgaaga tgtcaaacgg cccccagcgc ccoctggtaac 150
tgacaaggag gccaggaaga aggttctcaa acaagctttt tcagccaacc 200
aagtgcggga gaagctggat gtggtggtaa ttggcagtgg ctttgggggc 250
ctggctgcag ctgcaattct agctaaagct ggcaagcgag tcctgggtgct 300
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 aaaa 3004

<210> 113
 <211> 610
 <212> PRT
 <213> Homo sapiens

<400> 113
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 Asn Pro Phe Ser Glu Asp Val Lys Arg Pro Pro Ala Pro Leu Val
 35 40 45
 Thr Asp Lys Glu Ala Arg Lys Lys Val Leu Lys Gln Ala Phe Ser
 50 55 60
 Ala Asn Gln Val Pro Glu Lys Leu Asp Val Val Val Ile Gly Ser
 65 70 75
 Gly Phe Gly Gly Leu Ala Ala Ala Ala Ile Leu Ala Lys Ala Gly
 80 85 90
 Lys Arg Val Leu Val Leu Glu Gln His Thr Lys Ala Gly Gly Cys
 95 100 105

Glu Arg Tyr Val Ser Met Pro Arg Glu Glu Ala Ala Glu His Ile
 425 430
 Pro Leu Leu Phe Phe Ala Phe Pro Ser Ala Lys Asp Pro Thr Trp
 440 445 450
 Glu Asp Arg Phe Pro Gly Arg Ser Thr Met Ile Met Leu Ile Pro
 455 460 465
 Thr Ala Tyr Glu Trp Phe Glu Glu Trp Gln Ala Glu Leu Lys Gly
 470 475 480
 Lys Arg Gly Ser Asp Tyr Glu Thr Phe Lys Asn Ser Phe Val Glu
 485 490 495
 Ala Ser Met Ser Val Val Leu Lys Leu Phe Pro Gln Leu Glu Gly
 500 505 510
 Lys Val Glu Ser Val Thr Ala Gly Ser Pro Leu Thr Asn Gln Phe
 515 520 525
 Tyr Leu Ala Ala Pro Arg Gly Ala Cys Tyr Gly Ala Asp His Asp
 530 535 540
 Leu Gly Arg Leu His Pro Cys Val Met Ala Ser Leu Arg Ala Gln
 545 550 555
 Ser Pro Ile Pro Asn Leu Tyr Leu Thr Gly Gln Asp Ile Phe Thr
 560 565 570
 Cys Gly Leu Val Gly Ala Leu Gln Gly Ala Leu Leu Cys Ser Ser
 575 580 585
 Ala Ile Leu Lys Arg Asn Leu Tyr Ser Asp Leu Lys Asn Leu Asp
 590 595 600
 Ser Arg Ile Arg Ala Gln Lys Lys Lys Asn
 605 610

<210> 114
 <211> 1701
 <212> DNA
 <213> Homo sapiens

<400> 114
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 gatagggctg acgctgctgc tgtgtgcggt gctgctgagc ttggcctcgg 150
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 aatatccagg cagcgagaga gatgtttgag aagctgactg aggaaggctc 850
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a 1701

<210> 115

<211> 301

<212> PRT

<213> Homo sapiens

<400> 115

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Val | Arg | Ile | Gly | Leu | Thr | Leu | Leu | Leu | Cys | Ala | Val | Leu |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Ser | Leu | Ala | Ser | Ala | Ser | Ser | Asp | Glu | Glu | Gly | Ser | Gln | Asp |
| | | | | 20 | | | | 25 | | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Ser | Leu | Asp | Ser | Lys | Thr | Thr | Leu | Thr | Ser | Asp | Glu | Ser | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Asp | His | Thr | Thr | Ala | Gly | Arg | Val | Val | Ala | Gly | Gln | Ile | Phe |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Leu | Asp | Ser | Glu | Glu | Ser | Glu | Leu | Glu | Ser | Ser | Ile | Gln | Glu | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Glu | Asp | Ser | Leu | Lys | Ser | Gln | Glu | Gly | Glu | Ser | Val | Thr | Glu | Asp |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Ser | Phe | Leu | Glu | Ser | Pro | Asn | Pro | Glu | Asn | Lys | Asp | Tyr | Glu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Glu | Pro | Lys | Lys | Val | Arg | Lys | Pro | Ala | Leu | Thr | Ala | Ile | Glu | Gly |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Ala | His | Gly | Glu | Pro | Cys | His | Phe | Pro | Phe | Leu | Phe | Leu | Asp |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Lys | Glu | Tyr | Asp | Glu | Cys | Thr | Ser | Asp | Gly | Arg | Glu | Asp | Gly | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Trp | Cys | Ala | Thr | Thr | Tyr | Asp | Tyr | Lys | Ala | Asp | Glu | Lys | Trp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Phe | Cys | Glu | Thr | Glu | Glu | Glu | Ala | Ala | Lys | Arg | Arg | Gln | Met |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Gln | Glu | Ala | Glu | Met | Met | Tyr | Gln | Thr | Gly | Met | Lys | Ile | Leu | Asn |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gly | Ser | Asn | Lys | Lys | Ser | Gln | Lys | Arg | Glu | Ala | Tyr | Arg | Tyr | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Gln | Lys | Ala | Ala | Ser | Met | Asn | His | Thr | Lys | Ala | Leu | Glu | Arg | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Tyr | Ala | Leu | Leu | Phe | Gly | Asp | Tyr | Leu | Pro | Gln | Asn | Ile | Gln |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Ala | Ala | Arg | Glu | Met | Phe | Glu | Lys | Leu | Thr | Glu | Glu | Gly | Ser | Pro |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Lys | Gly | Gln | Thr | Ala | Leu | Gly | Phe | Leu | Tyr | Ala | Ser | Gly | Leu | Gly |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Val | Asn | Ser | Ser | Gln | Ala | Lys | Ala | Leu | Val | Tyr | Tyr | Thr | Phe | Gly |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Ala | Leu | Gly | Gly | Asn | Leu | Ile | Ala | His | Met | Val | Leu | Val | Ser | Arg |
| | | | | 290 | | | | | 295 | | | | | 300 |

Leu

<210> 116
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 116

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 aaggatgagg cccacaatgc ctgtgtcttc accattagtc ccgtgcagcc 400
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 asaattgggtt aataatattc aacatgtcaa caac 584

<210> 117
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 117
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 Phe Pro Gly Gln Val Ala Gln Leu Ser Cys Thr Leu Ser Pro Gln
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 His Val Thr Ile Arg Asp Tyr Gly Val Ser Trp Tyr Gln Gln Arg
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 Ala Gly Ser Ala Pro Arg Tyr Leu Leu Tyr Tyr Arg Ser Glu Glu
 65 70 75
 Asp His His Arg Pro Ala Asp Ile Pro Asp Arg Phe Ser Ala Ala
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 Lys Asp Glu Ala His Asn Ala Cys Val Leu Thr Ile Ser Pro Val
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 Gln Pro Glu Asp Asp Ala Asp Tyr Tyr Cys Ser Val Gly Tyr Gly
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<212> DNA

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<212> PRT

<213> Homo sapiens

<400> 124

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| Val | Thr | Ser | Val | Leu | Gly | Arg | Gln | Thr | Met | Leu | Thr | Gln | Ser | Val |
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| Arg | Arg | Val | Gln | Pro | Gly | Lys | Lys | Asn | Pro | Ser | Ile | Phe | Ala | Lys |
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| Pro | Ala | Asp | Thr | Leu | Glu | Ser | Pro | Gly | Glu | Trp | Thr | Thr | Trp | Phe |
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| Asn | Ile | Asp | Tyr | Pro | Gly | Gly | Lys | Gly | Asp | Tyr | Glu | Arg | Leu | Asp |
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| Ala | Ile | Arg | Phe | Tyr | Tyr | Gly | Asp | Arg | Val | Cys | Ala | Arg | Pro | Leu |
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| Arg | Leu | Glu | Ala | Arg | Thr | Thr | Asp | Trp | Thr | Pro | Ala | Gly | Ser | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Gln | Val | Val | His | Gly | Ser | Pro | Arg | Glu | Gly | Phe | Trp | Cys | Leu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Arg | Glu | Gln | Arg | Pro | Gly | Gln | Asn | Cys | Ser | Asn | Tyr | Thr | Val |
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| Arg | Phe | Leu | Cys | Pro | Pro | Gly | Ser | Leu | Arg | Arg | Asp | Thr | Glu | Arg |
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| Ile | Trp | Ser | Pro | Trp | Ser | Pro | Trp | Ser | Lys | Cys | Ser | Ala | Ala | Cys |
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| Gly | Gln | Thr | Gly | Val | Gln | Thr | Arg | Thr | Arg | Ile | Cys | Leu | Ala | Glu |
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| Met | Val | Ser | Leu | Cys | Ser | Glu | Ala | Ser | Glu | Glu | Gly | Gln | His | Cys |
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| Met | Gly | Gln | Asp | Cys | Thr | Ala | Cys | Asp | Leu | Thr | Cys | Pro | Met | Gly |
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| Leu His Gly Ala | Val Ser Leu Pro Gly | Gly Ala Pro Ala Ser Gly |
| 230 | | 240 |
| Ala Ala Ile Tyr | Leu Leu Thr Lys Thr | Pro Lys Leu Leu Thr Gln |
| 245 | | 255 |
| Thr Asp Ser Asp | Gly Arg Phe Arg Ile | Pro Gly Leu Cys Pro Asp |
| 260 | | 270 |
| Gly Lys Ser Ile | Leu Lys Ile Thr Lys | Val Lys Phe Ala Pro Ile |
| 275 | | 285 |
| Val Leu Thr Met | Pro Lys Thr Ser Leu | Lys Ala Ala Thr Ile Lys |
| 290 | | 300 |
| Ala Glu Phe Val | Arg Ala Glu Thr Pro | Tyr Met Val Met Asn Pro |
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| Glu Thr Lys Ala | Arg Arg Ala Gly Gln | Ser Val Ser Leu Cys Cys |
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| Lys Ala Thr Gly | Lys Pro Arg Pro Asp | Lys Tyr Phe Trp Tyr His |
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| Asn Asp Thr Leu | Leu Asp Pro Ser Leu | Tyr Lys His Glu Ser Lys |
| 350 | | 360 |
| Leu Val Leu Arg | Lys Leu Gln Gln His | Gln Ala Gly Glu Tyr Phe |
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| Cys Lys Ala Gln | Ser Asp Ala Gly Ala | Val Lys Ser Lys Val Ala |
| 380 | | 390 |
| Gln Leu Ile Val | Thr Ala Ser Asp Glu | Thr Pro Cys Asn Pro Val |
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| Pro Glu Ser Tyr | Leu Ile Arg Leu Pro | His Asp Cys Phe Gln Asn |
| 410 | | 420 |
| Ala Thr Asn Ser | Phe Tyr Tyr Asp Val | Gly Arg Cys Pro Val Lys |
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| Thr Cys Ala Gly | Gln Gln Asp Asn Gly | Ile Arg Cys Arg Asp Ala |
| 440 | | 450 |
| Val Gln Asn Cys | Cys Gly Ile Ser Lys | Thr Glu Glu Arg Glu Ile |
| 455 | | 465 |
| Gln Cys Ser Gly | Tyr Thr Leu Pro Thr | Lys Val Ala Lys Glu Cys |
| 470 | | 480 |
| Ser Cys Gln Arg | Cys Thr Glu Thr Arg | Ser Ile Val Arg Gly Arg |
| 485 | | 495 |
| Val Ser Ala Ala | Asp Asn Gly Glu Pro | Met Arg Phe Gly His Val |
| 500 | | 510 |
| Tyr Met Gly Asn | Ser Arg Val Ser Met | Thr Gly Tyr Lys Gly Thr |
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<212> DNA

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 ttattttgtc ctctttcgtt ctgttttgtt tcaactgtgca gagattttctc 2450
 tgtaagggca acgaacgtgc tggcatcaaa gaatatcagt ttacatatat 2500
 aacaagtgtg ataagattcc accaaaaggac attctaatag ttttcttgtt 2550
 gctttaacac tggaagattt aaagaataaa aactcctgca taaacgattt 2600
 caggaatttg tattgcaatt tottaagatg aaaggaacag ccaccaagca 2650
 gtttcacact cactttactg atttctgtgt ggactgagta cattcagctg 2700
 acgaatttag ttoccaggaa gatggattga tgttcactag ctgggacaac 2750
 ttctgcaaaa tatgagacta ttccacttg ggaaaaatta caacagcaaa 2800
 aaaaaaaaaa aaaaaaaaaa 2819

<210> 129
 <211> 438
 <212> PRT
 <213> Homo sapiens

<400> 129
 Met Tyr Leu Ser Arg Ser Leu Ser Ile His Ala Leu Trp Val Thr
 1 5 10 15
 Val Ser Ser Val Met Gln Pro Tyr Pro Leu Val Trp Gly His Tyr
 20 25 30
 Asp Leu Cys Lys Thr Gln Ile Tyr Thr Glu Gly Lys Val Trp
 35 40 45
 Asp Tyr Met Ala Cys Gln Pro Glu Ser Thr Asp Met Thr Lys Tyr
 50 55 60
 Leu Lys Val Lys Leu Asp Pro Pro Asp Ile Thr Cys Gly Asp Pro
 65 70 75
 Pro Glu Thr Phe Cys Ala Met Gly Asn Pro Tyr Met Cys Asn Asn
 80 85 90
 Glu Cys Asp Ala Ser Thr Pro Glu Leu Ala His Pro Pro Glu Leu
 95 100 105
 Met Phe Asp Phe Glu Gly Arg His Pro Ser Thr Phe Trp Gln Ser
 110 115 120
 Ala Thr Trp Lys Glu Tyr Pro Lys Pro Leu Gln Val Asn Ile Thr

[illegible]

<210> 130
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 130
tcgattatgg acgaacatgg cagc 24

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 131
ttctgagatc cctcatcctc 20

<210> 132
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 132
agggttcagg acagcaagtt tggg 24

<210> 133
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 133
tttgetggac ctgggctacg gaattggctt ccctctacgg acagctggat 50

<210> 134
<211> 1493
<212> DNA
<213> Homo sapiens

<400> 134
cccacgcgtc cgggtgacct gggccgagcc ctcccggctg gctaagattg 50
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cgggcgcagg tgtcctcatg attctcttg tggaccatgt ccgtgatctt 150
ttttccctgc gtggtacggg taagggatgg actgcccctc tcagcctcta 200
ctgatcttta ccacacccaa gatttttttg aatggaggag acgggtcaag 250
agtttagcct tgcgactggc ccagtatcca ggtcgagggt ctgcagaagg 300

Gln Tyr Pro Gly Arg Gly Ser Ala Glu Gly Cys Asp Phe Ser Ile
 50 55 60
 His Phe Ser Ser Phe Gly Asp Val Ala Cys Met Ala Ile Cys Ser
 65 70 75
 Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe Leu Glu Thr Leu
 80 85 90
 Trp Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys Ile Gly Leu
 95 100 105
 Ala Ser Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile Ile Gln
 110 115 120
 Lys Val Lys Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met Glu
 125 130 135
 Cys Ser Leu Glu Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro
 140 145 150
 Ala Val Leu Thr Leu Glu Asp Thr Asp Val Ala Asn Gly Val Met
 155 160 165
 Asn Gly His Thr Pro Met His Leu Glu Pro Ala Pro Asn Phe Arg
 170 175 180
 Met Glu Pro Val Thr Ala Leu Gly Ile Leu Ser Leu Ile Leu Asn
 185 190 195
 Ile Met Cys Ala Ala Leu Asn Leu Ile Arg Gly Val His Leu Ala
 200 205 210
 Glu His Ser Leu Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu Asp
 215 220 225
 Gln Thr Ser

<210> 136
 <211> 239
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 39, 61, 143, 209
 <223> unknown base

<400> 136
 tgcttcctgg agaccctgtg gtgggaattc acagcttcnt atgacactac 50
 ctgcattggc nttagcctoca ggccatacgc ttttcttgag tttagacgca 100
 tcattcagaa agtgaagtgg cattttaact atgtaagttc ctntcagatg 150
 gagtgcagct tggaaaaaat tcaggaggag ctcaagttgc agcctccagc 200
 ggttcctcant atggaggaca cagatgtggc aaatgggggt 239

<210> 137
 <211> 2300
 <212> DNA

<213> Homo sapiens

<400> 137

ctcagcggcg cttcctcgta gcgagcctag tggcgggtgt ttgcattgaa 50
acgtgagcgc gaccogacct taaagagtgg ggagcaaagg gaggacagag 100
ccctttaaaa cgaggcgggt ggtgcctgccc cctttaaggcg cggggcgctcc 150
ggacgactgt atctgagccc cagactgccc cgagtttctg tcgagggctg 200
cgaggaaaagg cccctaggct gggctggtgt gcttgccggc ggcggcttcc 250
tccccgctcg tctccccgg gccagagagc acctcggtt cagtcatgct 300
gagcagagta tggaagcacc tgactacgaa gtgctatccg tgcgagaaca 350
gctattccac gagaggatcc gcgagtgtat tatatcaaca cttctgtttg 400
caacactgta catcctctgc cacatcttcc tgaccgcgtt caagaagcct 450
gctgagtcca ccacagtga tgatgaagat gccaccgtca acaagattgc 500
gctcgagctg tgcaccttta ccttgccaat tgccctgggt gctgtcctgc 550
tcttgccctt ctccatcatc agcaatgagg tgctgctctc cctgcctcgg 600
aactactaca tccagtggct caacggctcc ctcatccatg gcctctggaa 650
ccttggtttt ctcttcccca acctgtccct catcttccct atgccctttg 700
catattttct cactgagtct gagggctttg ctggctccag aaagggtgtc 750
ctgggccggg tctatgagac agtggtgatg ttgatgctcc tcaactgtct 800
ggtgctaggt atggtgtggg tggcatcagc cattgtggac aagaacaagg 850
ccaacagaga gtcaactctat gacttttggg agtactatct cccctacctc 900
tactcatgca tctccttctt tggggttctg ctgctcctgg tgtgtactcc 950
actgggtctc gcccgcatgt tctccgtcac tgggaagctg ctagtcaagc 1000
cccggtgctg ggaagacctg gaggagcagc tgtactgtcc agcctttgag 1050
gaggcagccc tgaccgcgag gatctgtaat cctacttctc gctggctgcc 1100
tttagacatg gagctgtctc acagacaggt cctggctctg cagacacaga 1150
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ggctaccccc tggctatgct gtgcttctgt gtgctgacgg gcctgtctgt 1250
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tgccccgagg catgcagggt acctccttag gccaggtctc cttctccaag 1350
ctgggtcctt ttggtgccgt cattcaggtt gtactcatct ttacctaata 1400
ggtgtcctca gttgtgggt tctatagctc tccactcttc cggagcctgc 1450
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 gcaatttcta cattgtgttc ctctacaacg cagcctttgc aggcctcacc 1650
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 aggcacttag gaagaccag caccagtgc ctccagctgg ggggtgggaag 1800
 gaaaaaactg gacactgcc tctgtgcct aggcctggag ggaagcccaa 1850
 ggctacttgg acctcaggac ctggaatctg agaggggtgg tggcagaggg 1900
 gagcagagcc atctgcacta ttgcataatc tgagccagag tttgggacca 1950
 ggacctcctg cttttccata ctttaactgtg gcctcagcat ggggtagggc 2000
 tgggtgactg ggtctagccc ctgatcccaa atctgtttac acatcaatct 2050
 gcctcactgc tgttctgggc catcccccata gccatgttta catgatttga 2100
 tgtgcaatag ggtggggtag gggcagggaag aggactgggc cagggcaggc 2150
 tcgggagata gattgtctcc cttgcctctg gcccagcaga gcctaagcac 2200
 tgtgtctatc tggaggggct ttggaccacc tgaagacca aggggatagg 2250
 gaggaggagg cttcagccat cagcaataaa gttgatccca gggaazazaa 2300

<210> 138
 <211> 489
 <212> PRT
 <213> Homo sapiens

<400> 138

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Ala | Pro | Asp | Tyr | Glu | Val | Leu | Ser | Val | Arg | Glu | Gln | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Phe | His | Glu | Arg | Ile | Arg | Glu | Cys | Ile | Ile | Ser | Thr | Leu | Leu | Phe |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ala | Thr | Leu | Tyr | Ile | Leu | Cys | His | Ile | Phe | Leu | Thr | Arg | Phe | Lys |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Pro | Ala | Glu | Phe | Thr | Thr | Val | Asp | Asp | Glu | Asp | Ala | Thr | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asn | Lys | Ile | Ala | Leu | Glu | Leu | Cys | Thr | Phe | Thr | Leu | Ala | Ile | Ala |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Leu | Gly | Ala | Val | Leu | Leu | Leu | Pro | Phe | Ser | Ile | Ile | Ser | Asn | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Leu | Leu | Ser | Leu | Pro | Arg | Asn | Tyr | Tyr | Ile | Gln | Trp | Leu | Asn |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Gly | Ser | Leu | Ile | His | Gly | Leu | Trp | Asn | Leu | Val | Phe | Leu | Phe | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asn | Leu | Ser | Leu | Ile | Phe | Leu | Met | Pro | Phe | Ala | Tyr | Phe | Phe | Thr |

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | | 125 | | | | | 130 | | | | | 135 |
| Glu | Ser | Glu | Gly | Phe | Ala | Gly | Ser | Arg | Lys | Gly | Val | Leu | Gly | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Val | Tyr | Glu | Thr | Val | Val | Met | Leu | Met | Leu | Leu | Thr | Leu | Leu | Val | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Leu | Gly | Met | Val | Trp | Val | Ala | Ser | Ala | Ile | Val | Asp | Lys | Asn | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Asn | Arg | Glu | Ser | Leu | Tyr | Asp | Phe | Trp | Glu | Tyr | Tyr | Leu | Pro | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Tyr | Leu | Tyr | Ser | Cys | Ile | Ser | Phe | Leu | Gly | Val | Leu | Leu | Leu | Leu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Val | Cys | Thr | Pro | Leu | Gly | Leu | Ala | Arg | Met | Phe | Ser | Val | Thr | Gly | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Lys | Leu | Leu | Val | Lys | Pro | Arg | Leu | Leu | Glu | Asp | Leu | Glu | Glu | Gln | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Tyr | Cys | Ser | Ala | Phe | Glu | Glu | Ala | Ala | Leu | Thr | Arg | Arg | Ile | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Cys | Asn | Pro | Thr | Ser | Cys | Trp | Leu | Pro | Leu | Asp | Met | Glu | Leu | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| His | Arg | Gln | Val | Leu | Ala | Leu | Gln | Thr | Gln | Arg | Val | Leu | Leu | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Lys | Arg | Arg | Lys | Ala | Ser | Ala | Trp | Gln | Arg | Asn | Leu | Gly | Tyr | Pro | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Leu | Ala | Met | Leu | Cys | Leu | Leu | Val | Leu | Thr | Gly | Leu | Ser | Val | Leu | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Ile | Val | Ala | Ile | His | Ile | Leu | Glu | Leu | Leu | Ile | Asp | Glu | Ala | Ala | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Met | Pro | Arg | Gly | Met | Gln | Gly | Thr | Ser | Leu | Gly | Gln | Val | Ser | Phe | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Ser | Lys | Leu | Gly | Ser | Phe | Gly | Ala | Val | Ile | Gln | Val | Val | Leu | Ile | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Phe | Tyr | Leu | Met | Val | Ser | Ser | Val | Val | Gly | Phe | Tyr | Ser | Ser | Pro | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Leu | Phe | Arg | Ser | Leu | Arg | Pro | Arg | Trp | His | Asp | Thr | Ala | Met | Thr | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Gln | Ile | Ile | Gly | Asn | Cys | Val | Cys | Leu | Leu | Val | Leu | Ser | Ser | Ala | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Leu | Pro | Val | Phe | Ser | Arg | Thr | Leu | Gly | Leu | Thr | Arg | Phe | Asp | Leu | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Leu | Gly | Asp | Phe | Gly | Arg | Phe | Asn | Trp | Leu | Gly | Asn | Phe | Tyr | Ile | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Val | Phe | Leu | Tyr | Asn | Ala | Ala | Phe | Ala | Gly | Leu | Thr | Thr | Leu | Cys | |

| | | |
|---|-----|-----|
| 440 | 445 | 450 |
| Leu Val Lys Thr Phe Thr Ala Ala Val Arg Ala Glu Leu Ile Arg | | |
| 455 | 460 | 465 |
| Ala Phe Gly Leu Asp Arg Leu Pro Leu Pro Val Ser Gly Phe Pro | | |
| 470 | 475 | 480 |
| Gln Ala Ser Arg Lys Thr Gln His Gln | | |
| 485 | | |

<210> 139
 <211> 294
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 53, 57
 <223> unknown base

<400> 139
 ggctgccgag ggaaggcccc ttgggttggt cttggttgct tggcggcggc 50
 ggnntentoc ccgctcgtcc tccccgggcc cagaggcacc tcggcttcag 100
 tcatgctgag cagagtatgg aagcacctga ctacgaagtg ctatccgtgc 150
 gagaacagct attccacgag aggatccgcg agtggtattat atcaacacct 200
 ctgtttgcaa cactgtacat cctctgccac atcttctgca cccgettcaa 250
 gaagcctgct gagttcacca cagtggatga tgaagatgcc accg 294

<210> 140
 <211> 526
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 197, 349
 <223> unknown base

<400> 140
 gaccgacctt aaagagtggg agcaaggga ggacagagcc ttttaaaacg 50
 aggcggtggt gcctgccctt taaggcgagg ggcgccgac gactgtatct 100
 gaggccccaga ctgccccgag tttctgtcgc aggcctgcgag gaaaggcccc 150
 taggctgggt ctggtgcttg gcggcgcgcg cttcctcccc gttgtentcc 200
 ccgggcccag aggcacctcg gcttcagtca tgctgagcag agtatggaag 250
 cacctgacta cgaagtgcta tccgtgcgag aacagctatt ccacgagagg 300
 atccgcgagt gtattatata aacacttctg tttgcaacac tgtacatcnt 350
 ctgccacatc ttctgaccc gcttcaagaa gcctgctgag ttcaccacag 400
 tggatgatga agatgccacc gtoacaaga ttgcgctcga gctgtgcacc 450

tttaccctgg caattgccct ggggtgctgc ctgctctgc ccttctccat 500
catcagcaat gaggtgctgc actccc 526

<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 141
gactgtatct gagccccaga ctgc 24

<210> 142
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 142
tcagcaatga ggtgctgctc 20

<210> 143
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 143
tgaggaagat gagggacagg ttgg 24

<210> 144
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 144
tatggaagca cctgactacg aagtgctatc cgtgcgagaa cagctattcc 50

<210> 145
<211> 685
<212> DNA
<213> Homo sapiens

<400> 145
gatgtgctcc ttggagctgg tgtgcagtgt cctgactgta agatcaagtc 50
caaacctgtt ttggaattga ggaaacttct cttttgatct cagcccttgg 100
tggtcacagt cttcatgctg ctgtgggtga tattactggt cctggctcct 150
gtcagtggaac agtttgcaag gacacccagg cccattattt tcotccagcc 200
tccatggacc acagtcttcc aaggagagag agtgacccto acttgcaagg 250

gatttcgctt ctactcacca cagaaaaaaa aatggtacca tcggtacctt 300
 gggaagaaaa tactaagaga aaccccagac aatatccttg aggttcagga 350
 atctggagag tacagatgcc agggccaggg ctccccctctc agtagccctg 400
 tgcacttgga tttttcttca gagatgggat ttctctatgc tgcccaggct 450
 aatgttgaac tcttgggctc aagtgatctg ctcacctagg cctctcaaag 500
 cgctgggatt acagcttcgc tgatcctgca agctccactt tctgtgtttg 550
 aaggagactc tgtggttctg aggtgccggg caaaggcggg agtaaacctg 600
 aataatacta ttacaagaa tgataatgct ctggcattcc ttaataaaag 650
 aactgacttc caaaaaaaaa aaaaaaaaaa aaaaa 685

<210> 146
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 146
 Met Leu Leu Trp Val Ile Leu Leu Val Leu Ala Pro Val Ser Gly
 1 5 10 15
 Gln Phe Ala Arg Thr Pro Arg Pro Ile Ile Phe Leu Gln Pro Pro
 20 25 30
 Trp Thr Thr Val Phe Gln Gly Glu Arg Val Thr Leu Thr Cys Lys
 35 40 45
 Gly Phe Arg Phe Tyr Ser Pro Gln Lys Thr Lys Trp Tyr His Arg
 50 55 60
 Tyr Leu Gly Lys Glu Ile Leu Arg Glu Thr Pro Asp Asn Ile Leu
 65 70 75
 Glu Val Gln Glu Ser Gly Glu Tyr Arg Cys Gln Ala Gln Gly Ser
 80 85 90
 Pro Leu Ser Ser Pro Val His Leu Asp Phe Ser Ser Glu Met Gly
 95 100 105
 Phe Pro His Ala Ala Gln Ala Asn Val Glu Leu Leu Gly Ser Ser
 110 115 120
 Asp Leu Leu Thr

<210> 147
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 147
 cagaagaggg ggctagctag ctgtctctgc ggaccaggga gacccccgcg 50
 cccccccggt gtgaggcggc ctcacagggc cgggtgggct ggcgagccga 100
 cgcgccggcg gaggaggctg tgaggagtgt gtggaacagg acccgggaca 150

gaggaaccat ggctccgag aacctgagca ccttttgctt gttgctgcta 200
 tacctcatcg gggcggtgat tgcggagca gatttctata agatcttggg 250
 ggtgcctcga agtgccctcta taaaggatat taaaaaggcc tataggaaac 300
 tagccctcga gcttcatccc gaccggaacc ctgatgatcc acaagcccag 350
 gagaaattcc aggatctggg tgctgcttat gaggttctgt cagatagtga 400
 gaaacggaaa cagtacgata cttatggtga agaaggatta aaagatggtc 450
 atcagagctc ccatggagac attttttcac acttcttttg ggattttggt 500
 ttcatgtttg gaggaacccc tcgtcagcaa gacagaaata ttccaaggag 550
 aagtgatatt attgtagatc tagaagtcac tttggaagaa gtatatgcag 600
 gaaattttgt ggaagtagtt agaaacaaac ctgtggcaag gcaggctcct 650
 ggcaaacgga agtgcaattg tcggcaagag atgcggacca ccagctggg 700
 ccctgggcgc ttccaaatga ccagggaggt ggtctgcgac gaatgcccta 750
 atgtcaaact agtgaatgaa gaacgaacgc tggaagtga aatagagcct 800
 ggggtgagag acgcoatgga gtaccccttt attggagaag gtgagcctca 850
 cgtggatggg gagcctggag atttacggtt ccgaatcaaa gttgtcaagc 900
 acccaatatt tgaaaggaga ggagatgatt tgtacacaaa tgtgacaatc 950
 tcattagtgt agtcaactgt tggttttgag atggatatta ctcaattgga 1000
 tggtcacaag gtacatattt ccggggataa gatcaccagg ccaggagcga 1050
 agctatggaa gaaaggggaa gggctcccca actttgacaa caacaatc 1100
 aagggtcctt tgataatcac ttttgatgtg gattttccaa aagaacagtt 1150
 aacagagga gcgagagaag gtatcaaaca gctactgaaa caagggtcag 1200
 tgcagaaggat atacaatgga ctgcaaggat attgagagtg aataaaattg 1250
 gactttgttt aaaataagtg aataagcgat atttattatc tgcaagggtt 1300
 ttttgatgtg gtttttgttt ttattttcaa tatgcaagtt aggccttaatt 1350
 tttttatcta atgatcatca tgaaatgaat aagagggtct aagaatttgt 1400
 ccatttgcat tcggaagaaga atgaccagca aaagggttat taatacctct 1450
 ccctttgggg atttaattgtc tgggtgtgco gcctgagttt caagaattaa 1500
 agctgcaaga ggactccagg agcaaaagaa acacaatata gaggggttga 1550
 gttgttagca atttcattca aaatgccaac tggagaagtc tgtttttaaa 1600
 tacattttgt tgttattttt a 1621

<210> 148
 <211> 358
 <212> PRT

<213> Homo sapiens

<400> 148

Met Ala Pro Gln Asn Leu Ser Thr Phe Cys Leu Leu Leu Leu Tyr
1 . 5 10 15
Leu Ile Gly Ala Val Ile Ala Gly Arg Asp Phe Tyr Lys Ile Leu
20 30
Gly Val Pro Arg Ser Ala Ser Ile Lys Asp Ile Lys Lys Ala Tyr
35 40 45
Arg Lys Leu Ala Leu Gln Leu His Pro Asp Arg Asn Pro Asp Asp
50 55 60
Pro Gln Ala Gln Glu Lys Phe Gln Asp Leu Gly Ala Ala Tyr Glu
65 70 75
Val Leu Ser Asp Ser Glu Lys Arg Lys Gln Tyr Asp Thr Tyr Gly
80 85 90
Glu Glu Gly Leu Lys Asp Gly His Gln Ser Ser His Gly Asp Ile
95 100 105
Phe Ser His Phe Phe Gly Asp Phe Gly Phe Met Phe Gly Gly Thr
110 115 120
Pro Arg Gln Gln Asp Arg Asn Ile Pro Arg Gly Ser Asp Ile Ile
125 130 135
Val Asp Leu Glu Val Thr Leu Glu Glu Val Tyr Ala Gly Asn Phe
140 145 150
Val Glu Val Val Arg Asn Lys Pro Val Ala Arg Gln Ala Pro Gly
155 160 165
Lys Arg Lys Cys Asn Cys Arg Gln Glu Met Arg Thr Thr Gln Leu
170 175 180
Gly Pro Gly Arg Phe Gln Met Thr Gln Glu Val Val Cys Asp Glu
185 190 195
Cys Pro Asn Val Lys Leu Val Asn Glu Glu Arg Thr Leu Glu Val
200 205 210
Glu Ile Glu Pro Gly Val Arg Asp Gly Met Glu Tyr Pro Phe Ile
215 220 225
Gly Glu Gly Glu Pro His Val Asp Gly Glu Pro Gly Asp Leu Arg
230 235 240
Phe Arg Ile Lys Val Val Lys His Pro Ile Phe Glu Arg Arg Gly
245 250 255
Asp Asp Leu Tyr Thr Asn Val Thr Ile Ser Leu Val Glu Ser Leu
260 265 270
Val Gly Phe Glu Met Asp Ile Thr His Leu Asp Gly His Lys Val
275 280 285
His Ile Ser Arg Asp Lys Ile Thr Arg Pro Gly Ala Lys Leu Trp
290 295 300

Lys Lys Gly Glu Gly Leu Pro Asn Phe Asp Asn Asn Asn Ile Lys
 305 310
 Gly Ser Leu Ile Ile Thr Phe Asp Val Asp Phe Pro Lys Glu Gln
 320 325 330
 Leu Thr Glu Glu Ala Arg Glu Gly Ile Lys Gln Leu Leu Lys Gln
 335 340 345
 Gly Ser Val Gln Lys Val Tyr Asn Gly Leu Gln Gly Tyr
 350 355

<210> 149
 <211> 509
 <212> DNA
 <213> Homo sapiens
 <220>
 <221> unsure
 <222> 34, 52, 134, 142, 155, 158, 196, 217, 228, 272, 347, 410, 445,
 482
 <223> unknown base

<400> 149
 tgggaccagg gaaccccggtg ccccccggtg gagngcctaa caggccggtg 50
 gntgcgacgg aagcggcggg cggaggaggt tttgaggatt ttggaacag 100
 gaccgcgaca gaggaaccat ggttccgcag aacntgacga cnttttgcct 150
 gttgntgnta tacttcacg gggcggtgat tgcgcgacga gatttntata 200
 agattttggg gtgcctngaa gtgcctnta taaaggatat taaaagggcc 250
 tataggaaac tagccctgca gntttatccc gaccggaacc ctgatgatcc 300
 acaagcccgag gagaaattcc aggatttggg tgctgtctat gaggttntgt 350
 cagatagtga gaaacggaaa cagtacgata attatggtga agaaggatta 400
 aaagatggtn atcagagctc ccatggagac attttttcac acttntttgg 450
 ggattttggt ttcattgttg gaggaacccc tngtcagcaa gacagaaata 500
 ttccaagag 509

<210> 150
 <211> 1532
 <212> DNA
 <213> Homo sapiens

<400> 150
 ggcacgaggc ggcggggcag tcgcgggatg cgcccgaggag ccacagcctg 50
 aggcctctcag gtctctgcag gtgtcgtgga ggaacctagc acctgccatc 100
 ctcttcccca atttgccact tcacagcagct ttagcccatg aggaggatgt 150
 gaccgggact gagtccaggag cccctctggaa gcatggagac tgtgtgtgatt 200
 gttgccatag gtgtgtctggc caccatcttt ctggcttcgt ttgcagcctt 250
 ggtgtctggtt tgcaggcagc gctactgccg gccgcgagac ctgctgcagc 300

gctatgattc taagcccatt gtggacctca ttggtgccat ggagaccag 350
 tctgagccct ctgagttaga actggacgat gtcgttatca ccaaccccc 400
 cattgagccc attctggaga atgaagactg gatcgaagat gcctcggttc 450
 tcatgtccca ctgcattgcc atcttgaaga ttgtcacac tctgacagag 500
 aagcttggtt ccatgacaat gggctctggg gccaaagatga agacttcagc 550
 cagtgtcagc gacatcattg tgggtggccaa gcggatcagc cccaggggtg 600
 atgatgttgt gaagtogatg tacctctcgt tggaccccaa actcctggac 650
 gcaacggacga ctgcctgct cctgtctgtc agtcacctg tgcgtggtgac 700
 aaggaatgcc tgccatctga cgggaggcct ggactggatt gaccagtctc 750
 tgtcggtgct tgaggagcat ttggaagtcc ttcgagaagc agccttagct 800
 tctgagccag ataaaggcct cccaggccct gaaggcttcc tgcaggagca 850
 gtctgcaatt tagtgcctac aggccagcag ctagccatga aggccctgc 900
 cgccatccct ggatggctca gcttagcctt ctacttttct ctatagatt 950
 agttgttctc cacggctgga gaggctcagct gtgtgtgcat agtaaagcag 1000
 gagatcccc tcagtttatg cctcttttgc agttgcaaac tgtggctggt 1050
 gaggggcagt ctaatactac agttagggga gatgccattc actctctgca 1100
 agaggagtat tgaaaactgg tggactgtca gctttatita gctcacctag 1150
 tgttttcaag aaaattgagc caccgtctaa gaaatcaaga ggtttcacat 1200
 taaaattaga atttctggcc tctctcgatc ggtcagaatg tgtggcaatt 1250
 ctgatctgca ttttcagaag aggacaatca attgaaacta agtaggggtt 1300
 tcttcttttg gcaagacttg tactctctca cctggcctgt ttcatttatt 1350
 tgtattatct gcctgggtccc tgaggcgtct gggctctctc tctcccttgc 1400
 aggtttgggt ttgaagctga ggaactacaa agttgatgat tcttttttta 1450
 tctttatgcc tgcaatttta ctagctacc actagggtga tagtaaaatt 1500
 atacttatgt ttcctctaaa aaaaaaaaaa aa 1532

<210> 151

<211> 226

<212> PRT

<213> Homo sapiens

<400> 151

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Thr | Val | Val | Ile | Val | Ala | Ile | Gly | Val | Leu | Ala | Thr | Ile |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Leu | Ala | Ser | Phe | Ala | Ala | Leu | Val | Leu | Val | Cys | Arg | Gln | Arg |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Cys | Arg | Pro | Arg | Asp | Leu | Leu | Gln | Arg | Tyr | Asp | Ser | Lys | Pro |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | 35 | 40 | 45 |
|-----------------|---------------------|---------------------|-----|
| Ile Val Asp Leu | Ile Gly Ala Met Glu | Thr Gln Ser Glu Pro | Ser |
| | 50 | 55 | 60 |
| Glu Leu Glu Leu | Asp Asp Val Val Ile | Thr Asn Pro His Ile | Glu |
| | 65 | 70 | 75 |
| Ala Ile Leu Glu | Asn Glu Asp Trp Ile | Glu Asp Ala Ser Gly | Leu |
| | 80 | 85 | 90 |
| Met Ser His Cys | Ile Ala Ile Leu Lys | Ile Cys His Thr Leu | Thr |
| | 95 | 100 | 105 |
| Glu Lys Leu Val | Ala Met Thr Met Gly | Ser Gly Ala Lys Met | Lys |
| | 110 | 115 | 120 |
| Thr Ser Ala Ser | Val Ser Asp Ile Ile | Val Val Ala Lys Arg | Ile |
| | 125 | 130 | 135 |
| Ser Pro Arg Val | Asp Asp Val Val Lys | Ser Met Tyr Pro Pro | Leu |
| | 140 | 145 | 150 |
| Asp Pro Lys Leu | Leu Asp Ala Arg Thr | Thr Ala Leu Leu Leu | Ser |
| | 155 | 160 | 165 |
| Val Ser His Leu | Val Leu Val Thr Arg | Asn Ala Cys His Leu | Thr |
| | 170 | 175 | 180 |
| Gly Gly Leu Asp | Trp Ile Asp Gln Ser | Leu Ser Ala Ala Glu | Glu |
| | 185 | 190 | 195 |
| His Leu Glu Val | Leu Arg Glu Ala Ala | Leu Ala Ser Glu Pro | Asp |
| | 200 | 205 | 210 |
| Lys Gly Leu Pro | Gly Pro Glu Gly Phe | Leu Gln Glu Gln Ser | Ala |
| | 215 | 220 | 225 |

Ile

<210> 152
 <211> 1027
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 1017, 1020
 <223> unknown base

<400> 152
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 tcgcgcgtgt cccaccact gcagccatga tctccttaac ggacacgcag 100
 aaaattggaa tgggattaac aggatttgga gtgtttttcc tgttctttgg 150
 aatgattctc ttttttgaca aagcactact ggctattgga aatgttttat 200
 ttgtagccgg ctgggctttt gtaattgggt tagaaagaac attcagattc 250
 ttcttccaaa aacataaaat gaaagctaca ggtttttttc tgggtggtgt 300

attttagtgc cttattggtt ggcccttgat aggcgatgac ttcgaaattt 350
 atggattttt tctcttggtc aggggcttct ttctgtcgct tgttggcttt 400
 attagaagag tgcagatcct tggatccctc cttaaattac ctggaattag 450
 atcatttgta gataaagttg gagaaagcaa caatatgcta taacaacaag 500
 tgaatttgaa gactcattta aaatattgtg ttatttataa agtcatttga 550
 agaattttca gcacaaaatt aaattacatg aaatagcttg taatgttctt 600
 tacaggagtt taaaacgtat agcctacaaa gtaccagcag caaattagca 650
 aagaagcagt gaaaacaggc ttctactcaa gtgaactaag aagaagtcag 700
 caagcaaaact gagagaggtg aaatccatgt taatgatgct taagaaactc 750
 ttgaaggcta tttgtgttgt tttccacaa tgtgcgaaac tcagccatcc 800
 ttagagaact gtggtgcctg tttcttttct tttattttg aaggctcagg 850
 agcatccata ggcatttgct ttttagaagt gtccactgca atggcaaaaa 900
 tatttccagt tgcactgtat ctctggaagt gatgcatgaa ttcgattgga 950
 ttgtgtcatt ttaaagtatt aaaaccaagg aaacccaat ttgatgtat 1000
 ggattacttt tttttgngcn cagggcc 1027

<210> 153
 <211> 138
 <212> PRT
 <213> Homo sapiens

<220>
 <221> N-myristoylation Sites
 <222> 11-16, 51-56 and 116-121
 <223> N-myristoylation Sites.

<220>
 <221> Transmembrane domains
 <222> 12-30, 33-52, 69-89 and 93-109
 <223> Transmembrane domains

<220>
 <221> Aminoacyl-transfer RNA Synthetases.
 <222> 49-59
 <223> Aminoacyl-transfer RNA synthetases class-II protein.

<400> 153
 Met Ile Ser Leu Thr Asp Thr Gln Lys Ile Gly Met Gly Leu Thr
 1 5 10 15
 Gly Phe Gly Val Phe Phe Leu Phe Phe Gly Met Ile Leu Phe Phe
 20 25 30
 Asp Lys Ala Leu Leu Ala Ile Gly Asn Val Leu Phe Val Ala Gly
 35 40 45
 Leu Ala Phe Val Ile Gly Leu Glu Arg Thr Phe Arg Phe Phe Phe
 50 55 60

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Lys | His | Lys | Met | Lys | Ala | Thr | Gly | Phe | Phe | Leu | Gly | Gly | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Val | Val | Leu | Ile | Gly | Trp | Pro | Leu | Ile | Gly | Met | Ile | Phe | Glu |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ile | Tyr | Gly | Phe | Phe | Leu | Leu | Phe | Arg | Gly | Phe | Phe | Pro | Val | Val |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Val | Gly | Phe | Ile | Arg | Arg | Val | Pro | Val | Leu | Gly | Ser | Leu | Leu | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Pro | Gly | Ile | Arg | Ser | Phe | Val | Asp | Lys | Val | Gly | Glu | Ser | Asn |
| | | | | 125 | | | | | 130 | | | | | 135 |

Asn Met Val

<210> 154
 <211> 405
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 66
 <223> unknown base

<400> 154
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 actcagcttc ccacnctggg etttccgagg tgttttcgcc gctgtccca 100
 ccactgcagc catgatctcc ttaacggaca cgcagaaaaa tggaatggga 150
 ttaaccggat ttggagtgtt tttctgttc tttggaatga ttctcttttt 200
 tgacaaagca ctactggcta ttggaatgt tttatttgta gccggcttgg 250
 cttttgtaat tggtttagaa agaacattca gattctcttt ccaaaaacat 300
 aaaaatgaa ctacaggttt tttctgggt ggtgtatttg tagtcottat 350
 tggttggcct ttgataggca tgatcttcga aatttatgga tttttctct 400
 tgttc 405

<210> 155
 <211> 1781
 <212> DNA
 <213> Homo sapiens

<400> 155
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 ccatgtgcc aaggtgcc ggaaggagac gccttctga gtctgggat 100
 tttctctct ctgaaatct ttgactgtgg gtagttattt atttctgaat 150
 aagagcgtcc acgcatcatg gacctcgcg gactgctgaa gtctcagttc 200
 ctgtgccacc tggctctctg ctacgtcttt attgcctcag ggctaatcat 250

caacaccatt cagctcttca ctctctctct ctggccatt aacaagcagc 300
 tcttcggaa gatcaactgc agactgtctt attgcatctc aagccagctg 350
 gtgatgtctc tggagtgtg gtcgggcacg gaatgcacca tcttcacgga 400
 cccgcgcgc tacctcaagt atgggaagga aaatgccatc gtggttctca 450
 accacaagtt tgaattgac tttctgtgtg gctggagcct gtccgaacgc 500
 tttgggtctg taggggctc caaggtctct gccaaagaa agctggccta 550
 tgtcccaatt atcggctgga tgtgttactt caccgagatg gtcttctgtt 600
 cgcgcaagt ggagcaggat cgcaagacgg ttgccaccag ttgcagcac 650
 ctccgggact accccgagaa gtattttttc ctgattcact gtgagggcac 700
 acggttcacg gagaagaagc atgagatcag catgcaggtg gccggggcca 750
 aggggtctgc tcgcctcaag catcacctgt tggcacgaac caagggttc 800
 gccatcacgc tgaggagctt gaaaaatga gtttcagctg tatatgactg 850
 tacactcaat ttcagaaata atgaaaatcc aacctgctg ggagtcttaa 900
 acggaagaa ataccatgca gatttgtatg ttaggagat cccactgaa 950
 gacatccctg aagacgatga cgagtgtctg gcctggctgc acaagctcta 1000
 ccaggagaag gatgcctttc aggaggagta ctacaggacg ggcaccttcc 1050
 cagagacgcc catggtgccc cccgcgcgc cctggacctc cgtgaactgg 1100
 ctgttttggg cctcgttgtt gctctacctt ttcttcagtt tctgtgtcag 1150
 catgatcagg agcgggtctt cctgacgctt ggcoagcttc atctcgtct 1200
 tctttgtgac ctccgtggga gttcgtatga tgattgtgtg gacggaaatt 1250
 gacaagggtc ctgcctacgc caactctgac agcaagcaga aactgaatga 1300
 ctgactcagg gaggtgtcac catccgaagg gaacctggg gaactgtgtg 1350
 cctctgcata tctccttag tgggacacgc tgacaaaggc tgggtgagcc 1400
 cctgtgtggc acggcggaag tcacgacctc tccagccagg gactctgttc 1450
 tcaaggccgc atggggagga agatgttttg taatcttttt tccccatgt 1500
 gcttttagtg gctttgtgtt tctttttgtg cgagtgtgtg tgagaatggc 1550
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 gctgcagggg agggcagggc tggggaccca aggggacaag tcccccttc 1650
 atccttttgt gctgagtttt ctgtaaccct tggttgccag agataaagtg 1700
 aaaagtgctt taggtgagat gactaaatta tgcctccaag aaaaaaaaa 1750
 taaagtgctt ttctgggtca aaaaaaaaa a 1781

<210> 156

<211> 378
 <212> PRT
 <213> Homo sapiens

<400> 156

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Asp | Leu | Ala | Gly | Leu | Leu | Lys | Ser | Gln | Phe | Leu | Cys | His | Leu | 1 | 5 | 10 | 15 |
| Val | Phe | Cys | Tyr | Val | Phe | Ile | Ala | Ser | Gly | Leu | Ile | Ile | Asn | Thr | 20 | 25 | 30 | |
| Ile | Gln | Leu | Phe | Thr | Leu | Leu | Leu | Trp | Pro | Ile | Asn | Lys | Gln | Leu | 35 | 40 | 45 | |
| Phe | Arg | Lys | Ile | Asn | Cys | Arg | Leu | Ser | Tyr | Cys | Ile | Ser | Ser | Gln | 50 | 55 | 60 | |
| Leu | Val | Met | Leu | Glu | Leu | Trp | Trp | Ser | Gly | Thr | Glu | Cys | Thr | Ile | 65 | 70 | 75 | |
| Phe | Thr | Asp | Pro | Arg | Ala | Tyr | Leu | Lys | Tyr | Gly | Lys | Glu | Asn | Ala | 80 | 85 | 90 | |
| Ile | Val | Val | Leu | Asn | His | Lys | Phe | Glu | Ile | Asp | Phe | Leu | Cys | Gly | 95 | 100 | 105 | |
| Trp | Ser | Leu | Ser | Glu | Arg | Phe | Gly | Leu | Leu | Gly | Gly | Ser | Lys | Val | 110 | 115 | 120 | |
| Leu | Ala | Lys | Lys | Glu | Leu | Ala | Tyr | Val | Pro | Ile | Ile | Gly | Trp | Met | 125 | 130 | 135 | |
| Trp | Tyr | Phe | Thr | Glu | Met | Val | Phe | Cys | Ser | Arg | Lys | Trp | Glu | Gln | 140 | 145 | 150 | |
| Asp | Arg | Lys | Thr | Val | Ala | Thr | Ser | Leu | Gln | His | Leu | Arg | Asp | Tyr | 155 | 160 | 165 | |
| Pro | Glu | Lys | Tyr | Phe | Phe | Leu | Ile | His | Cys | Glu | Gly | Thr | Arg | Phe | 170 | 175 | 180 | |
| Thr | Glu | Lys | Lys | His | Glu | Ile | Ser | Met | Gln | Val | Ala | Arg | Ala | Lys | 185 | 190 | 195 | |
| Gly | Leu | Pro | Arg | Leu | Lys | His | His | Leu | Leu | Pro | Arg | Thr | Lys | Gly | 200 | 205 | 210 | |
| Phe | Ala | Ile | Thr | Val | Arg | Ser | Leu | Arg | Asn | Val | Val | Ser | Ala | Val | 215 | 220 | 225 | |
| Tyr | Asp | Cys | Thr | Leu | Asn | Phe | Arg | Asn | Asn | Glu | Asn | Pro | Thr | Leu | 230 | 235 | 240 | |
| Leu | Gly | Val | Leu | Asn | Gly | Lys | Lys | Tyr | His | Ala | Asp | Leu | Tyr | Val | 245 | 250 | 255 | |
| Arg | Arg | Ile | Pro | Leu | Glu | Asp | Ile | Pro | Glu | Asp | Asp | Asp | Glu | Cys | 260 | 265 | 270 | |
| Ser | Ala | Trp | Leu | His | Lys | Leu | Tyr | Gln | Glu | Lys | Asp | Ala | Phe | Gln | 275 | 280 | 285 | |
| Glu | Glu | Tyr | Tyr | Arg | Thr | Gly | Thr | Phe | Pro | Glu | Thr | Pro | Met | Val | | | | |

| | | |
|---|-----|-----|
| 290 | 295 | 300 |
| Pro Pro Arg Arg Pro Trp Thr Leu Val Asn Trp Leu Phe Trp Ala | | |
| 305 | 310 | 315 |
| Ser Leu Val Leu Tyr Pro Phe Phe Gln Phe Leu Val Ser Met Ile | | |
| 320 | 325 | 330 |
| Arg Ser Gly Ser Ser Leu Thr Leu Ala Ser Phe Ile Leu Val Phe | | |
| 335 | 340 | 345 |
| Phe Val Ala Ser Val Gly Val Arg Trp Met Ile Gly Val Thr Glu | | |
| 350 | 355 | 360 |
| Ile Asp Lys Gly Ser Ala Tyr Gly Asn Ser Asp Ser Lys Gln Lys | | |
| 365 | 370 | 375 |
| Leu Asn Asp | | |

<210> 157

<211> 1849

<212> DNA

<213> Homo sapiens

<400> 157

ctgaggcggc ggtagcatgg aggggggagag tacgtcggcg gtgctctcgg 50

gctttgtgtc cggcgcactc gctttccagc acctcaacac ggactcggac 100

acggaaggtt ttcttcttgg ggaagtaaaa ggtgaagcca agaacagcat 150

tactgattcc caaatggatg atgttgaagt tgtttataca attgacattc 200

agaaatatat tccatgctat cagcttttta gcttttataa ttcttcaggc 250

gaagtaaatg agcaagcact gaagaaaata ttatcaaatg tcaaaaagaa 300

tgtggtaggt tggtaacaaat tccgtcgta ttcagatcag atcatgacgt 350

ttagagagag gctgcttcac aaaaacttgc aggagcattt ttcaaaccaa 400

gacctgtgtt ttctgtctatt aacaccaagt ataataacag aaagctgctc 450

tactcatcga ctggaacatt ccttatataa acctcaaaaa ggactttttc 500

acagggtacc tttagtggtt gccaatctgg gcatgtctga acaactgggt 550

tataaaactg tatcagggtc ctgtatgtcc actggtttta gccgagcagt 600

acaaacacac agctctaaat tttttgaaga agatggatcc ttaaaggagg 650

tacataagat aaatgaaatg tatgcttcat tacaagagga attaaagagt 700

atatgcaaaa aagtgaaga cagtgaacaa gcagtagata aactagtaaa 750

ggatgtaaac agattaaaac gagaaattga gaaaaggaga ggagcacaga 800

ttcaggcagc aagagagaag aacatccaaa aagacctca ggagaacatt 850

tttctttgtc aggcattacg gacctttttt ccaaatcttg aattttctca 900

ttcatgtggt atgtctttaa aaaatagaca tgtttctaaa agtagctgta 950

<210> 159
 <211> 2651
 <212> DNA
 <213> Homo sapiens

<400> 159
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 cgcgcgccac accctctgcg gtcccccggg cgcctgccac ccttccctcc 150
 ttcccccgct ccccgcctcg ccggccagtc agcttgccgg gttcgctgcc 200
 ccgcgaaacc ccgaggtcac cagcccggcg ctctgcttcc ctgggcgcgg 250
 cgccgcctcc acgcccctct tctccccctg cccggcgctt ggcacggggg 300
 accgttgctt gacgcgaggc ccagctctac ttttcgcccc gcgtctcttc 350
 cgccgtgctg cctcttccac caactccaac tcttctctcc tccagctcca 400
 ctcgctagtc cccgactccg ccagccctcg gcccgctgcc gttagcgcgc 450
 ttcccgctcg gtcccaaagg tgggaacgcg tccgccccgg ccgcacccat 500
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 ccgcgctgct ggctgccgag ctcaagtcga aaagttgctc ggaagtgcga 600
 cgtcttttac tgtccaaagg cttcaacaag aacgatgccc ccctccacga 650
 gatcaacggg gatcatttga agatctgtcc ccagggttct acctgctgct 700
 ctcaagagat ggaggagaag tacagcctgc aaagtaaaga tgatttcaaa 750
 agtggtgtca gcgaacagtg caatcatttg caagctgtct ttgcttcacg 800
 ttacaagaag tttgatgaat tcttcaaaga actactgaa aatgcagaga 850
 aatccctgaa tgatatgttt gtgaagacat atggccattt atacatgcaa 900
 aattctgagc tatttaaaga tctcttcgta gagttgaaac gttactacgt 950
 ggtgggaaat gtgaacctgg aagaaatgct aaatgacttc tgggctcgcc 1000
 tcttgagcgc gatgttccgc ctggtgaact ccagtagcca ctttacagat 1050
 gagtatctgg aatgtgtgag caagtatacg gagcagctga agcccttcgg 1100
 agatgtccct cgcaaattga agctccaggt tactcgtgct tttgtagcag 1150
 cccgtacttt cgtcgaaggc ttagcgggtg cgggagatgt cgtgagcaag 1200
 gtctccgtgg taaacccac agcccagtggt acccatgccc tgttgaagat 1250
 gatctactgc tccactgcc ggggtctcgt gactgtgaag ccatgttaca 1300
 actactgctc aaacatcatg agaggctggt tggccaacca aggggatctc 1350
 gattttgaat ggaacaattt catagatgct atgctgatgg tggcagagag 1400
 gctagagggt cttttcaaca ttgaatcggt catggatccc atcgatgtga 1450

agatttctga tgctattatg aacatgcagg ataatagtgt tcaagtgtct 1500
 cagaagggtt tccagggatg tggacccccc aagcccctcc cagctggacg 1550
 aatttctcgt tccatctctg aaagtgcctt cagtgtctgc ttcagaccac 1600
 atcaccocga ggaacgcca accacagcag ctggcactag ttggaccga 1650
 ctgggtactg atgtcaagga gaaactgaaa caggccaaga aattctggtc 1700
 ctccctccg agcaacgttt gcaacgatga gaggatggct gcaggaaacg 1750
 gcaatgagga tgactgttgg aatgggaaag gcaaaagcag gtacctgttt 1800
 gcagtgcacg gaaatggatt agccaaccag ggcaacaacc cagaggtcca 1850
 ggttgacacc agcaaaccag acatactgat ccttcgtcaa atcatggctc 1900
 ttcgagtgat gaccagcaag atgaagaatg catacaatgg gaacgacgtg 1950
 gacttctttg atatcagtga tgaaagtagt ggagaaggaa gtggaagtgg 2000
 ctgtgagtat cagcagtgcc cttcagagtt tgactacaat gccactgacc 2050
 atgtcgggaa gagtgcgaat gagaagccg acagtgtctg tgcctgtctt 2100
 ggggcacagg octacctcct cactgtcttc tgcattctgt tcttggttat 2150
 gcagagagag tggagataat tctcaaaact tgagaaaaag tgttcatcaa 2200
 aaagttaaaa ggcaccagtt atcacttttc taccatccta gtgactttgc 2250
 tttttaaatg aatggacaac aatgtacagt ttttactatg tggccactgg 2300
 tttaagaagt gctgactttg ttttctcatt cagttttggg aggaaaaggg 2350
 actgtgcatt gagttggttc ctgctccccc aaocatgtt aaacgtggct 2400
 aacagtgtag gtacagaact atagttagtt gtgcatttgt gattttatca 2450
 ctctattatt tgtttgatg tttttttctc atttcgtttg tgggtttttt 2500
 tttccaactg tgatctgcc ttgtttctta caagcaaacc agggctccctt 2550
 ctgggcacgt aacatgtacg tatttctgaa atattaaata gctgtacaga 2600
 agcagggttt atttatcatg ttatcttatt aaaagaaaaa gcccaaaaag 2650
 c 2651

<210> 160

<211> 556

<212> PRT

<213> Homo sapiens

<400> 160

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Arg | Phe | Gly | Leu | Pro | Ala | Leu | Leu | Cys | Thr | Leu | Ala | Val |
| 1 | | | | 5 | | | | 10 | | | | | | 15 |
| Leu | Ser | Ala | Ala | Leu | Leu | Ala | Ala | Glu | Leu | Lys | Ser | Lys | Ser | Cys |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Ser | Glu | Val | Arg | Arg | Leu | Tyr | Val | Ser | Lys | Gly | Phe | Asn | Lys | Asn |

[illegible]

| | | |
|-----------------|---------------------|-------------------------|
| 350 | 355 | 360 |
| Phe Ser Ala Arg | Phe Arg Pro His His | Pro Glu Glu Arg Pro Thr |
| 365 | 370 | 375 |
| Thr Ala Ala Gly | Thr Ser Leu Asp Arg | Leu Val Thr Asp Val Lys |
| 380 | 385 | 390 |
| Glu Lys Leu Lys | Gln Ala Lys Lys Phe | Trp Ser Ser Leu Pro Ser |
| 395 | 400 | 405 |
| Asn Val Cys Asn | Asp Glu Arg Met Ala | Ala Gly Asn Gly Asn Glu |
| 410 | 415 | 420 |
| Asp Asp Cys Trp | Asn Gly Lys Gly Lys | Ser Arg Tyr Leu Phe Ala |
| 425 | 430 | 435 |
| Val Thr Gly Asn | Gly Leu Ala Asn Gln | Gly Asn Asn Pro Glu Val |
| 440 | 445 | 450 |
| Gln Val Asp Thr | Ser Lys Pro Asp Ile | Leu Ile Leu Arg Gln Ile |
| 455 | 460 | 465 |
| Met Ala Leu Arg | Val Met Thr Ser Lys | Met Lys Asn Ala Tyr Asn |
| 470 | 475 | 480 |
| Gly Asn Asp Val | Asp Phe Phe Asp Ile | Ser Asp Glu Ser Ser Gly |
| 485 | 490 | 495 |
| Glu Gly Ser Gly | Ser Gly Cys Glu Tyr | Gln Gln Cys Pro Ser Glu |
| 500 | 505 | 510 |
| Phe Asp Tyr Asn | Ala Thr Asp His Ala | Gly Lys Ser Ala Asn Glu |
| 515 | 520 | 525 |
| Lys Ala Asp Ser | Ala Gly Val Arg Pro | Gly Ala Gln Ala Tyr Leu |
| 530 | 535 | 540 |
| Leu Thr Val Phe | Cys Ile Leu Phe Leu | Val Met Gln Arg Glu Trp |
| 545 | 550 | 555 |

Arg

<210> 161

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 161

ctcgtggta aaccccacag ccc 23

<210> 162

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 162
tcacatcgat gggatccatg accg 24

<210> 163
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 163
ggtctctgtga ctgtgaagcc atgttacaac tactgctcaa acatcatgag 50

<210> 164
<211> 870
<212> DNA
<213> Homo sapiens

<400> 164
ctcgccctca aatgggaacg ctggcctggg actaaagcat agaccaccag 50
gctgagtatc ctgacctgag tcatccccag ggatcaggag cctccagcag 100
ggaaccttcc attatattct tcaagcaact tacagctgca cgcacagttg 150
cgatgaaagt tctaatctct tccctcctcc tgttgctgcc actaatgctg 200
atgtccatgg tctctagcag cctgaatcca ggggtcgcca gagggccacag 250
ggaccgaggc caggcttcta ggagatggct ccagggaaggc ggccaagaat 300
gtgagtgcaa agattggttc ctgagagccc cgagaagaaa attcatgaca 350
gtgtctgggc tgccaaagaa gcagtgcccc tgtgatcatt tcaagggcaa 400
tgtgaagaaa acaagacacc aaaggcacca cagaaagcca aacaagcatt 450
ccagagcctg ccagcaattt ctcaaacaat gtcagctaag aagcttttgc 500
ctgcctttgt aggagctctg agcgcccaact ctccaatta aacattctca 550
gccaagaaga cagtgcacac acctaccaga cactcttctt ctcccacctc 600
actctccacc tgtaccacc cctaaatcat tccagtgtgc tcaaaaagca 650
tgtttttcaa gatcattttg tttgttgctc tctctagtgt ctctctctct 700
cgtcagtcct agcctgtgcc ctccccttac ccaggcttag gcttaattac 750
ctgaaagatt ccaggaaaact gtagcttctt agctagtgtc atttaacctt 800
aatgcaatc aggaaagtag caaacagaag tcaataaata tttttaaatg 850
tcaaaaaaaaa aaaaaaaaaa 870

<210> 165
<211> 119
<212> PRT
<213> Homo sapiens

<400> 165
Met Lys Val Leu Ile Ser Ser Leu Leu Leu Leu Leu Pro Leu Met

| | | | |
|---|-----|-----|-----|
| 1 | 5 | 10 | 15 |
| Leu Met Ser Met Val Ser Ser Ser Leu Asn Pro Gly Val Ala Arg | 20 | 25 | 30 |
| Gly His Arg Asp Arg Gly Gln Ala Ser Arg Arg Trp Leu Gln Glu | 35 | 40 | 45 |
| Gly Gly Gln Glu Cys Glu Cys Lys Asp Trp Phe Leu Arg Ala Pro | 50 | 55 | 60 |
| Arg Arg Lys Phe Met Thr Val Ser Gly Leu Pro Lys Lys Gln Cys | 65 | 70 | 75 |
| Pro Cys Asp His Phe Lys Gly Asn Val Lys Lys Thr Arg His Gln | 80 | 85 | 90 |
| Arg His His Arg Lys Pro Asn Lys His Ser Arg Ala Cys Gln Cys | 95 | 100 | 105 |
| Phe Leu Lys Gln Cys Gln Leu Arg Ser Phe Ala Leu Pro Leu | 110 | 115 | |

<210> 166
 <211> 551
 <212> DNA
 <213> Homo sapiens

<400> 166
 aatggctgtc ttagtacttc gctgacagt tgtcctggga ctgcttgtct 50
 tattctctgac ctgctatgca gacgacaaac cagacaagcg agacgacaag 100
 ccagacgact cgggcaaaga cccaaagcca gacttcccca aattcctaag 150
 cctcctgggc acagagatca ttgagaatgc agtcgagttc atcctccgct 200
 ccatgtccag gagcacagga tttatggaat ttgatgataa tgaaggaaaa 250
 cattcatcaa agtgacatcc tcaggacaca cccatgtggc tctgggacaa 300
 tccaagagca gccaaatcct gcttttccag ttgggtccca caagtctctc 350
 aggacagagc cctcaaagca actcccaacg agttctcagg attcaggctc 400
 tggcttcaac caaacagaac tcattttgaa caccctgaot gcatttttgc 450
 ttttagaagg ttagaataaa tatggcgctt tgggatcaca tagttgatgg 500
 agaggaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 550
 a 551

<210> 167
 <211> 87
 <212> PRT
 <213> Homo sapiens

<400> 167
 Met Ala Val Leu Val Leu Arg Leu Thr Val Val Leu Gly Leu Leu
 1 5 10 15
 Val Leu Phe Leu Thr Cys Tyr Ala Asp Asp Lys Pro Asp Lys Pro

| | | | | | |
|-----------------|---------------------|-------------------------|----|--|----|
| | 20 | | 25 | | 30 |
| Asp Asp Lys Pro | Asp Asp Ser Gly Lys | Asp Pro Lys Pro Asp Phe | | | |
| | 35 | 40 | | | 45 |
| Pro Lys Phe Leu | Ser Leu Leu Gly Thr | Glu Ile Ile Glu Asn Ala | | | |
| | 50 | 55 | | | 60 |
| Val Glu Phe Ile | Leu Arg Ser Met Ser | Arg Ser Thr Gly Phe Met | | | |
| | 65 | 70 | | | 75 |
| Glu Phe Asp Asp | Asn Glu Gly Lys His | Ser Ser Lys | | | |
| | 80 | 85 | | | |

<210> 168
 <211> 1371
 <212> DNA
 <213> Homo sapiens

<400> 168
 ggacgccagc gctgcagag gctgagcagg gaaaaagcca gtgccccagc 50
 ggaagcacag ctcagagctg gtctgccatg gacatccttg tccactcct 100
 gcagctgctg gtgctgcttc ttaccctgcc cctgcacctc atggctctgc 150
 tgggctgctg gcagcccctg tgcaaaagct acttccccta cctgatggcc 200
 gtgctgactc ccaagagcaa ccgcaagatg gagagcaaga aacggggagct 250
 cttcagccag ataaaggggc ttacagagag ctcgggaaa gtggccctac 300
 tggagctggg ctgcggaacc ggagccaact ttcagttcta cccaccgggc 350
 tgcaggggtc cctgcctaga cccaaatccc cactttgaga agttcctgac 400
 aaagagcatg gctgagaaca ggcacctcca atatgagcgg tttgtggtg 450
 ctctcgga gaagcatgaga cagctggctg atggctccat ggatgtggtg 500
 gtctgcactc tgggtgctgt ctctgtgcag agcccaagg aggtcctgca 550
 ggaggtccgg agagtactga gaccgggagg tgtgctcttt ttctgggagc 600
 atgtggcaga accatatgga agctgggcct tcatgtggca gcaagttttc 650
 gagccccact ggaaacacat tggggatggc tgctgcotca ccagagagac 700
 ctggaaggat cttgagaacg ccagttctc cgaaatccaa atggaacgac 750
 agccccctcc cttgaagtgg ctacctgttg ggcaccacat catgggaaag 800
 gctgtcaaac aatctttccc aagctccaag gcactcattt gctccttccc 850
 cagcctccaa ttagaacaag cccccacca gcctatctat cttccactga 900
 gagggacctc gcagaatgag agaagacatt catgtaccac ctactagtcc 950
 ctctctcccc aacctctgcc agggcaatct ctaactcaa tccgccttc 1000
 gacagtgaaa aagctctact tctacgtga cccagggagg aaacactagg 1050
 accctgtgtg atcctcaact gcaagtttct ggactagtct cccaacgttt 1100

gcctcccaat gttgtccctt tccctcgttc ccatggtaaa gtcctctctg 1150
 ctttcctcct gaggctacac ccatgcgtct ctaggaactg gtcacaaaag 1200
 tcatggtgcc tgcacccctg ccaagccccc ctgacccctt ctcgccacta 1250
 ccacattctt cctgagctgg gggcaccagg gagaatcaga gatgtcgggg 1300
 atgccagagc aagactcaaa gaggcagagg tttgttctc aaatatcttt 1350
 taataaatag acgaaaccac g 1371

<210> 169
 <211> 277
 <212> PRT
 <213> Homo sapiens

<400> 169
 Met Asp Ile Leu Val Pro Leu Leu Gln Leu Leu Val Leu Leu Leu
 1 5 10 15
 Thr Leu Pro Leu His Leu Met Ala Leu Leu Gly Cys Trp Gln Pro
 20 25 30
 Leu Cys Lys Ser Tyr Phe Pro Tyr Leu Met Ala Val Leu Thr Pro
 35 40 45
 Lys Ser Asn Arg Lys Met Glu Ser Lys Lys Arg Glu Leu Phe Ser
 50 55 60
 Gln Ile Lys Gly Leu Thr Gly Ala Ser Gly Lys Val Ala Leu Leu
 65 70 75
 Glu Leu Gly Cys Gly Thr Gly Ala Asn Phe Gln Phe Tyr Pro Pro
 80 85 90
 Gly Cys Arg Val Thr Cys Leu Asp Pro Asn Pro His Phe Glu Lys
 95 100 105
 Phe Leu Thr Lys Ser Met Ala Glu Asn Arg His Leu Gln Tyr Glu
 110 115 120
 Arg Phe Val Val Ala Pro Gly Glu Asp Met Arg Gln Leu Ala Asp
 125 130 135
 Gly Ser Met Asp Val Val Val Cys Thr Leu Val Leu Cys Ser Val
 140 145 150
 Gln Ser Pro Arg Lys Val Leu Gln Glu Val Arg Arg Val Leu Arg
 155 160 165
 Pro Gly Gly Val Leu Phe Phe Trp Glu His Val Ala Glu Pro Tyr
 170 175 180
 Gly Ser Trp Ala Phe Met Trp Gln Gln Val Phe Glu Pro Thr Trp
 185 190 195
 Lys His Ile Gly Asp Gly Cys Cys Leu Thr Arg Glu Thr Trp Lys
 200 205 210
 Asp Leu Glu Asn Ala Gln Phe Ser Glu Ile Gln Met Glu Arg Gln
 215 220 225

Pro Pro Pro Leu Lys Trp Leu Pro Val Gly Pro His Ile Met Gly
 230 235 240

Lys Ala Val Lys Gln Ser Phe Pro Ser Ser Lys Ala Leu Ile Cys
 245 250 255

Ser Phe Pro Ser Leu Gln Leu Glu Gln Ala Thr His Gln Pro Ile
 260 265 270

Tyr Leu Pro Leu Arg Gly Thr
 275

<210> 170
 <211> 1621
 <212> DNA
 <213> Homo sapiens

<400> 170
 gtgggattta tttgagtgca agatcgtttt ctccagtggtg gtggaagttg 50
 cctcatcgca ggcagatgtt ggggctttgt ccgaacagct cccctctgcc 100
 agcttctgta gataagggtt aaaaactaat atttatatga cagaagaaaa 150
 agatgtcatt ccgtaaagta aacatcatca tcttggtcct ggctgtgtct 200
 ctctctttac tggttttgca ccataacttc ctccagcttg gcagtttgtt 250
 aaggaatgag gttacagatt caggaattgt agggcctcaa cctatagact 300
 ttgtcccaaa tgctctccga catgcagtag atgggagaca agaggagatt 350
 cctgtgtgtca tcgctgcatc tgaagacagg cttggggggg ccattgcagc 400
 tataaacagc attcagcaca aactcgcctc caatgtgatt ttctacattg 450
 ttactctcaa caatacagca gaccatctcc ggtcctggct caacagtgat 500
 tccctgaaaa gcatcagata caaaattgtc aattttgacc ctaaaacttt 550
 ggaaggaaaa gttaaaggag atcctgacca gggggaatcc atgaaacctt 600
 taacctttgc aaggttctac ttgccaatcc tggttcccag cgcaaagaag 650
 gccatataca tggatgatga tgtaattgtg caaggtgata ttcttgccct 700
 ttacaataca gcaactgaagc caggacatgc agctgcattt tcagaagatt 750
 gtgattcagc ctctactaaa gttgtcatcc gtggagcagg aaaccagtac 800
 aattacattg gctatcttga ctataaaaag gaaagaatcc gtaagctttc 850
 catgaaagcc agcacttgct catttaatcc tggagttttt gttgcaaacc 900
 tgacggaatg gaaacgacag aatataacta accaactgga aaaatggatg 950
 aaactcaatg tagaagaggg actgtatagc agaacctgtg ctggtagcat 1000
 cacaacacct cctctgctta tcgtatttta tcaacagcac tctaccatcg 1050
 atcctatgtg gaatgtccgc caccttgggt ccagtgtctg aaaacgatat 1100
 tcacctcagt ttgtaaaggc tgccaagtta ctccattgga atggacattt 1150

gaagccatgg ggaaggactg cttcatatac tgatgtttgg gaaaaatggt 1200
 atattccaga cccaacaggc aaattcaacc taatccgaag atataccgag 1250
 atctcaaaca taaagtgaag cagaatttga actgtaagca agcattttctc 1300
 aggaagtctc ggaagatagc atgcatggga agtaacagtt gctaggcttc 1350
 aatgcctatc ggtagcaagc catggaaaaa gatgtgtcag ctaggtaaag 1400
 atgacaaact gccctgtctg gcagtcagct tcccagacag actatagact 1450
 ataaatatgt ctccatctgc cttaccaagt gttttcttac tacaatgctg 1500
 aatgactgga aagaagaact gatatggcta gttcagctag ctggtacaga 1550
 taattcaaaa ctgctgttgg ttttaatttt gtaacctgtg gcctgatctg 1600
 taaataaaac ttacattttt c 1621

<210> 171
 <211> 371
 <212> PRT
 <213> Homo sapiens

<400> 171
 Met Ser Phe Arg Lys Val Asn Ile Ile Ile Leu Val Leu Ala Val
 1 5 10 15
 Ala Leu Phe Leu Leu Val Leu His His Asn Phe Leu Ser Leu Ser
 20 25 30
 Ser Leu Leu Arg Asn Glu Val Thr Asp Ser Gly Ile Val Gly Pro
 35 40 45
 Gln Pro Ile Asp Phe Val Pro Asn Ala Leu Arg His Ala Val Asp
 50 55 60
 Gly Arg Gln Glu Ile Pro Val Val Ile Ala Ala Ser Glu Asp
 65 70 75
 Arg Leu Gly Gly Ala Ile Ala Ala Ile Asn Ser Ile Gln His Asn
 80 85 90
 Thr Arg Ser Asn Val Ile Phe Tyr Ile Val Thr Leu Asn Asn Thr
 95 100 105
 Ala Asp His Leu Arg Ser Trp Leu Asn Ser Asp Ser Leu Lys Ser
 110 115 120
 Ile Arg Tyr Lys Ile Val Asn Phe Asp Pro Lys Leu Leu Glu Gly
 125 130 135
 Lys Val Lys Glu Asp Pro Asp Gln Gly Glu Ser Met Lys Pro Leu
 140 145 150
 Thr Phe Ala Arg Phe Tyr Leu Pro Ile Leu Val Pro Ser Ala Lys
 155 160 165
 Lys Ala Ile Tyr Met Asp Asp Asp Val Ile Val Gln Gly Asp Ile
 170 175 180
 Leu Ala Leu Tyr Asn Thr Ala Leu Lys Pro Gly His Ala Ala Ala

| 185 | | | | | 190 | | | | | 195 | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Ser | Glu | Asp | 200 | Asp | Ser | Ala | Ser | 205 | Thr | Lys | Val | Val | Ile | Arg | 210 | |
| Gly | Ala | Gly | Asn | 215 | Gln | Tyr | Asn | Tyr | 220 | Gly | Tyr | Leu | Asp | Tyr | Lys | 225 | |
| Lys | Glu | Arg | Ile | 230 | Arg | Lys | Leu | Ser | 235 | Lys | Ala | Ser | Thr | Cys | Ser | 240 | |
| Phe | Asn | Pro | Gly | 245 | Val | Phe | Val | Ala | 250 | Leu | Thr | Glu | Trp | Lys | Arg | 255 | |
| Gln | Asn | Ile | Thr | 260 | Asn | Gln | Leu | Glu | 265 | Trp | Met | Lys | Leu | Asn | Val | 270 | |
| Glu | Glu | Gly | Leu | 275 | Ser | Arg | Thr | Leu | 280 | Ala | Gly | Ser | Ile | Thr | Thr | 285 | |
| Pro | Pro | Leu | Leu | 290 | Ile | Val | Phe | Tyr | 295 | Gln | Gln | His | Ser | Thr | Ile | Asp | 300 |
| Pro | Met | Trp | Asn | 305 | Val | Arg | His | Leu | 310 | Gly | Ser | Ser | Ala | Gly | Lys | Arg | 315 |
| Tyr | Ser | Pro | Gln | 320 | Phe | Val | Lys | Ala | 325 | Ala | Lys | Leu | Leu | His | Trp | Asn | 330 |
| Gly | His | Leu | Lys | 335 | Pro | Trp | Gly | Arg | 340 | Thr | Ala | Ser | Tyr | Thr | Asp | Val | 345 |
| Trp | Glu | Lys | Trp | 350 | Ile | Pro | Asp | Pro | 355 | Thr | Gly | Lys | Phe | Asn | Leu | 360 | |
| Ile | Arg | Arg | Tyr | 365 | Thr | Glu | Ile | Ser | 370 | Asn | Ile | Lys | | | | | |

<210> 172
 <211> 585
 <212> DNA
 <213> Homo sapiens

 <220>
 <221> unsure
 <222> 71, 76, 86, 91, 162, 220, 269, 281
 <223> unknown base

<400> 172
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 aggttacaga ttcaggaatt ntagnnctc aacctntaga nttgtccca 100
 aatgttctcc gacatgcagt agatgggaga caagaggaga ttctgttgtt 150
 catgcgtgca tntgaagaca ggcttggggg ggccattgca gctataaaca 200
 gcattcagca caacactogn tccaatgtga tttctacat tgttactctc 250
 aacaatacag cagaccatnt ccggtcctgg ntcaacagtg attccctgaa 300
 aagcatcaga tacaaaattg tcaattttga ccctaaactt ttggaaggaa 350

aagtaaagga ggatcctgac cagggggaat ccatgaaacc tttaaccttt 400
gcaagggtct acttgccaat tctgggtccc agcgcaaaga aggccatata 450
catggatgat gatgtaattg tgcaagggtga tattcttgcc ctttacaata 500
cagcactgaa gccaggacat gcagctgcat ttccagaaga ttgtgattca 550
gcctctacta aagttgtcat ccgtggagca ggaaa 585

<210> 173
<211> 1866
<212> DNA
<213> Homo sapiens

<400> 173
cgacgctcta gcggttaccg ctgcgggctg gctgggcgta gtggggctgc 50
gcggctgccca cggagctaga gggcaagtgt gctcggccca gcgtgcaggg 100
aacgcggcgg gccagacaac gggctgggct ccggggcctg cggcgcgggc 150
gctgagctgg cagggcgggt cgggcgcggg gctgcatccg catctcctcc 200
atcgctgca gtaaggcggg ccgcgcggag cctttgaggg gaacgacttg 250
tcggagccct aaccaggggt gtctctgagc ctgggtggat cccggagcgc 300
tcacatcact ttccgatcac ttcaaagtgg ttaaaaacta atatttatat 350
gacagaagaa aaagatgtca ttccgtaaag taacatcat catcttggtc 400
ctgggctggt gctctctct tactggtttt gcaccataac ttctcagct 450
tgaggcagtt tgttaaggaa tgaggttaca gattcaggaa ttgtagggcc 500
tcaacctata ggactttgtc ccaaatgctc tccgacatgc agtagatggg 550
agacaagagg agattcctgt ggtcatcgct gcactctgaag acaggcttgg 600
gggggccatt gcagctataa acagcattca gcacaacact cgctccaatg 650
tgattttcta cattgttact ctcaacaata cagcagacca tctccggtcc 700
tgggctcaac agtgattccc tgaaaagcat cagatacaaa attgtcaatt 750
ttgaccctaa acttttgga gaaaagtaa aggaggatcc tgaccagggg 800
gaatccatga aacctttaac ctttgcaagg ttctacttgc caattctggg 850
ttcccagcgc aaagaaggcc atatacatgg atgatgatg aattgtgcaa 900
ggtgatattc ttgcccttta caatacagca ctgaagccag gacatgcagc 950
tgcatattca gaagattgtg attcagcctc tactaaagtt gtcacccgtg 1000
gagcaggaaa ccagtacaat tacattggct atcttgacta taaaagga 1050
agaattcgta agctttccat gaaagccagc acttgctcat ttaatcctgg 1100
agtttttgtt gcaaacctga cggaatggaa acgacagaat ataactaacc 1150
aactggaaaa atggatgaaa ctcaatgtag aagagggact gtatagcaga 1200

accctggctg gtagcatcac aacacctcct ctgcttatcg tattttatca 1250
 acagcactct accatcgatc ctatgtggaa tgtccgccac cttggttcca 1300
 gtgtcggaaa acgatattca cctcagtttg taaaggctgc caagtactc 1350
 cattggaatg gacatttgaa gccatgggga aggactgctt catatactga 1400
 tgtttgggga aaaatggtat attccagacc caacaggcaa attcaaccta 1450
 atccgaagat ataccgagat ctcaaacata aagtgaaca gaatttgaac 1500
 tgtaagcaag catttctcag gaagtcctgg aagatagcat gcgtgggaag 1550
 taacagttgc taggcttcaa tgcctatcgg tagcaagcca tggaaaaaga 1600
 tgtgtcagct aggtaaagat gacaaactgc cctgctctggc agtcagcttc 1650
 ccagacagac tatagactat aaatatgtot ccactctgcct taccagtggt 1700
 tttcttacta caatgctgaa tgactggaaa gaagaactga tatggctagt 1750
 tcagctagct ggtacagata attcaaaact gctgttgggt ttaattttgt 1800
 aacctgtggc ctgatctgta aataaaaactt acatttttca ataggtaaaa 1850
 aaaaaaaaa aaaaaa 1866

<210> 174
 <211> 823
 <212> DNA
 <213> Homo sapiens

<400> 174
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 acagcctcct ctgaaggccg gccataccag agtcctgcct cggcatgggc 100
 ctcaccattg aggcagctcc actgtctgtg ctggtctgag ggtgctgcct 150
 gtcatggggg cagccatctc ccaggggggc ctcctcgcca tcgtctgcaa 200
 cggctctcgt ggcttcttgc tgctgtctgt ctgggtcctc ctctgctggg 250
 cctgccattc tcgtctgccg acgttgactc tctctctgaa tcagtgccca 300
 actccagccc tggccctgt cctgagaagg cccaccacc ccagaagccc 350
 agccatgaag gcagctacct gctgcagccc tgaaggcccc tggcctagcc 400
 tggagccag gacctaagtc cacctcacct agagcctgga attaggatcc 450
 cagagttcag ccagcctggg gtccagaact caagagtcgg cctgcttgga 500
 gctgagccca gcggcccaga gtctagccag cttggttcca ataggagctc 550
 agtgccctca aggagatggg cctgggggtg gggcttatga gttgtgtcta 600
 gaggccaggg catctggact atgctccato ccaagggcca agggctcagg 650
 gccgggtcca ctctttccct aggctgagca cctctaggcc ctctaggttg 700
 gggaagcaaa ctggaaccca tggcaataat aggagggtgt ccaggctggg 750

ccccccct ggtcctccca gtgtttgctg gataataaat ggaactatgg 800

ctctaaaaaa aaaaaaaaaa aaa 823

<210> 175

<211> 87

<212> PRT

<213> Homo sapiens

<400> 175

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Ile | Ser | Gln | Gly | Ala | Leu | Ile | Ala | Ile | Val | Cys |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Gly | Leu | Val | Gly | Phe | Leu | Leu | Leu | Leu | Trp | Val | Ile | Leu |
| | | | 20 | | | | | | 25 | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Cys | Trp | Ala | Cys | His | Ser | Arg | Leu | Pro | Thr | Leu | Thr | Leu | Ser | Leu |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Pro | Val | Pro | Thr | Pro | Ala | Leu | Ala | Pro | Val | Leu | Arg | Arg | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | His | Pro | Arg | Ser | Pro | Ala | Met | Lys | Ala | Ala | Thr | Cys | Cys | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Pro | Glu | Gly | Pro | Trp | Pro | Ser | Leu | Glu | Pro | Arg | Thr |
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<210> 176

<211> 1660

<212> DNA

<213> Homo sapiens

<400> 176

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atgatgttga caccctccac cgaattctaa gtggaatcat gtcgggaaga 200

gatacaatcc ttggcctgtg tatcctcgca tagccttgt ctttggccat 250

gatgtttacc ttcagattca tcaccaccct tctggttcac attttcattt 300

cattgggtat ttggggattg ttgtttgtct gcggtgtttt atggtggctg 350

tattatgact ataccaacga cctcagcata gaattggaca cagaaaggga 400

aaatatgaag tgcgtgctgg ggtttgctat cgtatccaca ggcacacagg 450

cagtgtctgt cgtcttgatt ttgtttctca gaaagagaa aaaattgaca 500

gttgagcttt tccaaatcac aaataaaggc atcagcagtg ctcccttctc 550

gctgttccag ccaactgtga catttgccat cctcattttc ttctgggtcc 600

tctgggtggc tgtgtgctg agcctgggaa ctgcaggagc tgcccagggt 650

atggaaggcg gccaaagtga atataagccc ctttcgggca ttcggtacat 700

gtggtgtgac catttaattg gctcatctg gactagtga ttcactcttg 750

cgtgccagca aatgactata gctggggcag tggttacttg ttatttcaac 800
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 <211> 445
 <212> PRT
 <213> Homo sapiens

<400> 177
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 35 40 45
 Phe Val Cys Gly Val Leu Trp Trp Leu Tyr Tyr Asp Tyr Thr Asn
 50 55 60
 Asp Leu Ser Ile Glu Leu Asp Thr Glu Arg Glu Asn Met Lys Cys
 65 70 75
 Val Leu Gly Phe Ala Ile Val Ser Thr Gly Ile Thr Ala Val Leu
 80 85 90
 Leu Val Leu Ile Phe Val Leu Arg Lys Arg Ile Lys Leu Thr Val

| | | |
|-----------------|---------------------|-------------------------|
| 410 | 415 | 420 |
| Asn Asn Ala Arg | Ala Gln Gln Asp Lys | His Ser Leu Arg Asn Glu |
| 425 | 430 | 435 |
| Glu Gly Thr Glu | Leu Gln Ala Ile Val | Arg |
| 440 | 445 | |

<210> 178
 <211> 2773
 <212> DNA
 <213> Homo sapiens

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 ttctcactat gaaggcatct gttattgaaa tgttccttgg tttgtggtg 250
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 atctcgagtt cattgtgaaa tgtccagcag gatgccaaga ccccaaatat 400
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 tgccgtacac agtgggtgtc ttgataatc aggagggaaa atactgttc 500
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<210> 179

09044-1-01

157

| | | | | | |
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| Ala His Leu Lys Gly Val Ile Thr Tyr | | Ala Ile Gly Val Ala Trp | | | |
| | 620 | 625 | | | 630 |
| Ala Ala Gln Glu Glu Leu Glu Val Ile | | Ala Thr His Pro Ala Arg | | | |
| | 635 | 640 | | | 645 |
| Asp His Ser Phe Phe Val Asp Glu Phe | | Asp Asn Leu His Gln Tyr | | | |
| | 650 | 655 | | | 660 |
| Val Pro Arg Ile Ile Gln Asn Ile Cys | | Thr Glu Phe Asn Ser Gln | | | |
| | 665 | 670 | | | 675 |

Pro Arg Asn

<210> 180
 <211> 1759
 <212> DNA
 <213> Homo sapiens

<400> 180
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 gcgctgtgctc ctccagacca tgggtgcgcca ggcccgacg gctccgcgcc 150
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 ccttgtgtgat ttgggggaat gtctcagaat tccaaagagt ggttgaagtg 250
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 aacaacatt cgagtggtag gaggactcct gtctgctcat ctgctctcca 350
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<210> 181
 <211> 541
 <212> PRT
 <213> Homo sapiens

<400> 181

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Pro | Phe | Arg | Leu | Leu | Ile | Pro | Leu | Gly | Leu | Leu | Cys | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Pro | Gln | His | His | Gly | Ala | Pro | Gly | Pro | Asp | Gly | Ser | Ala | Pro |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asp | Pro | Ala | His | Tyr | Ser | Phe | Ser | Leu | Thr | Leu | Ile | Asp | Ala | Leu |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Asp | Thr | Leu | Leu | Ile | Leu | Gly | Asn | Val | Ser | Glu | Phe | Gln | Arg | Val |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Val | Glu | Val | Leu | Gln | Asp | Ser | Val | Asp | Phe | Asp | Ile | Asp | Val | Asn |
| | | | 65 | | | | | | 70 | | | | | 75 |
| Ala | Ser | Val | Phe | Glu | Thr | Asn | Ile | Arg | Val | Val | Gly | Gly | Leu | Leu |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Ser | Ala | His | Leu | Leu | Ser | Lys | Lys | Ala | Gly | Val | Glu | Val | Glu | Ala |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gly | Trp | Pro | Cys | Ser | Gly | Pro | Leu | Leu | Arg | Met | Ala | Glu | Glu | Ala |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Ala | Arg | Lys | Leu | Leu | Pro | Ala | Phe | Gln | Thr | Pro | Thr | Gly | Met | Pro |

[illegible]

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<210> 183

<211> 311

<212> PRT

<213> Homo sapiens

<220>

<221> Signal peptide

<222> 1-29

<223> Signal peptide

<220>

<221> N-glycosylation sites

<222> 40-43, 134-137

<223> N-glycosylation sites.

<220>

<221> Tissue factor proteins homology

<222> 92-119

<223> Tissue factor proteins homology

<220>

<221> Transmembrane domain

<222> 230-255

<223> Transmembrane domain

<220>

<221> Integrins alpha chain protein homology

<222> 232-262

<223> Integrins alpha chain protein homology

<400> 183

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gln | Thr | Phe | Thr | Met | Val | Leu | Glu | Glu | Ile | Trp | Thr | Ser | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Met | Trp | Phe | Phe | Tyr | Ala | Leu | Ile | Pro | Cys | Leu | Leu | Thr | Asp |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Val | Ala | Ile | Leu | Pro | Ala | Pro | Gln | Asn | Leu | Ser | Val | Leu | Ser |
| | | | | 35 | | | | | 40 | | | | | 45 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Asn | Met | Lys | His | Leu | Leu | Met | Trp | Ser | Pro | Val | Ile | Ala | Pro |
| | | | | 50 | | | | | 55 | | | | | 60 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Glu | Thr | Val | Tyr | Tyr | Ser | Val | Glu | Tyr | Gln | Gly | Glu | Tyr | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Leu | Tyr | Thr | Ser | His | Ile | Trp | Ile | Pro | Ser | Ser | Trp | Cys | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Thr | Glu | Gly | Pro | Glu | Cys | Asp | Val | Thr | Asp | Asp | Ile | Thr | Ala |
| | | | | 95 | | | | | 100 | | | | | 105 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Val | Pro | Tyr | Asn | Leu | Arg | Val | Arg | Ala | Thr | Leu | Gly | Ser | Gln |
| | | | | 110 | | | | | 115 | | | | | 120 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Ala | Trp | Ser | Ile | Leu | Lys | His | Pro | Phe | Asn | Arg | Asn | Ser |
| | | | | 125 | | | | | 130 | | | | | 135 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ile | Leu | Thr | Arg | Pro | Gly | Met | Glu | Ile | Thr | Lys | Asp | Gly | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Leu | Val | Ile | Glu | Leu | Glu | Asp | Leu | Gly | Pro | Gln | Phe | Glu | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Val | Ala | Tyr | Trp | Arg | Arg | Glu | Pro | Gly | Ala | Glu | Glu | His | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Met | Val | Arg | Ser | Gly | Gly | Ile | Pro | Val | His | Leu | Glu | Thr | Met |
| | | | | 185 | | | | | 190 | | | | | 195 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Glu | Pro | Gly | Ala | Ala | Tyr | Cys | Val | Lys | Ala | Gln | Thr | Phe | Val | Lys |
| | | | | 200 | | | | | 205 | | | | | 210 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Ile | Gly | Arg | Tyr | Ser | Ala | Phe | Ser | Gln | Thr | Glu | Cys | Val | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |

Val Gln Gly Glu Ala Ile Pro Leu Val Leu Ala Leu Phe Ala Phe
230 235 240

Val Gly Phe Met Leu Ile Leu Val Val Val Pro Leu Phe Val Trp
245 250 255

Lys Met Gly Arg Leu Leu Gln Tyr Ser Cys Cys Pro Val Val Val
260 265 270

Leu Pro Asp Thr Leu Lys Ile Thr Asn Ser Pro Gln Lys Leu Ile
275 280 285

Ser Cys Arg Arg Glu Glu Val Asp Ala Cys Ala Thr Ala Val Met
290 295 300

Ser Pro Glu Glu Leu Leu Arg Ala Trp Ile Ser
305 310

<210> 184
<211> 808
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 654, 711, 748
<223> unknown base

<400> 184
tcctgctgat gcacatctgg gtttggcaaa aggaggttgc ttcgagccgc 50
cctttctagc ttcttgcccg gctctagaac aattcaggct tcgctgcgac 100
tagacctcag ctccaacata tgcattctga agaaagatgg ctgagatgac 150
agaatgcttt attttggaaa gaaacaatgt tctaggtcaa actgagtcta 200
ccaaatgcag actttcacia tggttctaga agaaatctgg acaagtcttt 250
tcatgtggtt tttctacgca ttgattccat gtttgcctac agatgaagtg 300
gccattctgc ctgcccctca gaacctctct gtactctcaa ccaacatgaa 350
gcactctctg atgtggagcc cagtgatcgc gcctggagaa acagtgtact 400
attctgtoga ataccagggg gagtaogaga gcctgtacac gagccacatc 450
tggatcccca gcagctggtg ctactcoact gaaggctcgt agtgtgatgt 500
cactgatgac atcacggcca ctgtgcoata caacctttgt gtcagggccca 550
cattgggctc acagacctca gcctggagca tcttgaagca tccctttaat 600
agaaaactcaa ccatccttac ccgacctggg atggagatca ccaaagatgg 650
cttnacacctg gttattgagc tggaggacct ggggccccag tttgagtccc 700
ttgtggccta ntggaggagg ggcgaaacccc ttgcggcgca aggggttngc 750
gaaccacctg cggccgctgg ggtatctctc gagaaaagag agggccaata 800
tgaccac 808

<210> 185
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 185
aggcttcgct gogactagac ctc 23

<210> 186
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 186
ccaggtcggg taaggatggt tgag 24

<210> 187
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 187
tttctacgca ttgattccat gtttgctcag agatgaagtg gccattctgc 50

<210> 188
<211> 1227
<212> DNA
<213> Homo sapiens

<400> 188
cggacgcgtg ggccgccacc tccggaacaa gccatggtgg cggcgacggt 50
ggcagcggcg tggctgctcc tgtgggctgc ggctgcgcg cagcaggagc 100
aggacttcta cgaactcaag gcggtcaaca tccggggcaa actggtgtcg 150
ctggagaagt accgcggatc ggtgtccctg gtggtgaatg tggccagcga 200
gtgcggcttc acagaccagc actaccgagc cctgcagcag ctgcagcgag 250
acctgggccc ccaccacttt aacgtgctcg ccttccctg caaccagttt 300
ggccaacagc agcctgacag caacaaggag attgagagct ttgccgcgcg 350
cacctacagt gtctcattcc ccatgttttag caagattgca gtcaccggta 400
ctgggtgccca tctctccttc aagtacctgg cccagacttc tgggaaggag 450
cccacctgga acttctgga gtaacctagta gcccagatg gaaagtggtg 500
aggggcttgg gacccaactg tgtcagtga ggaggtcaga cccagatca 550
cagcgtcgtg gaggaagctc atcctactga agcagaaga cttataacca 600

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 tcttttactc ttatgccatt ggtcccacatc ttcttgtggg ggaataatc 750
 tagtattttg attatttgaa tcttacagca acaaatagga actcctggcc 800
 aatgagagct cttgaccagt gaatcaccag ccgatacgaa cgtcttgcca 850
 acaaaaatgt gtggcaataa gaagtatac aagcaataat cccccacca 900
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 attaggatga aatacctgtg aaagtgccta ggcagtgcca gccaaatagg 1000
 aggcattcaa tgaacatttt ttgcatataa accaaaaaat aacttgttat 1050
 caataaaaac ttgcatcaa catgaatttc cagccgatga taatccaggc 1100
 caaagggtta gttgttgta tttcctctgt attattttct tcattacaaa 1150
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 taaaaatgaa agtatcctcc tcaaaaa 1227

<210> 189
 <211> 187
 <212> PRT
 <213> Homo sapiens

<400> 189
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 20 25 30
 Val Asn Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly
 35 40 45
 Ser Val Ser Leu Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr
 50 55 60
 Asp Gln His Tyr Arg Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly
 65 70 75
 Pro His His Phe Asn Val Leu Ala Phe Pro Cys Asn Gln Phe Gly
 80 85 90
 Gln Gln Glu Pro Asp Ser Asn Lys Glu Ile Glu Ser Phe Ala Arg
 95 100 105
 Arg Thr Tyr Ser Val Ser Phe Pro Met Phe Ser Lys Ile Ala Val
 110 115 120
 Thr Gly Thr Gly Ala His Pro Ala Phe Lys Tyr Leu Ala Gln Thr
 125 130 135
 Ser Gly Lys Glu Pro Thr Trp Asn Phe Trp Lys Tyr Leu Val Ala
 140 145 150
 Pro Asp Gly Lys Val Val Gly Ala Trp Asp Pro Thr Val Ser Val

| | | | |
|-------------------------------------|---------------------|-----|-----|
| | 155 | 160 | 165 |
| Glu Glu Val Arg Pro Gln Ile Thr Ala | Leu Val Arg Lys Leu | Ile | |
| 170 | 175 | 180 | |
| Leu Leu Lys Arg Glu Asp Leu | | | |
| 185 | | | |

<210> 190
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 190
 gcaggacttc tacgacttca aggc 24

<210> 191
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 191
 agtctgggcc aggtacttga aggc 24

<210> 192
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 192
 caacatccgg ggcaaaactgg tgctcgtgga gaagtaccgc ggatcggtgt 50

<210> 193
 <211> 2187
 <212> DNA
 <213> Homo sapiens

<400> 193
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 acgtcgggat gctgcgcctg gggaggctgt gcgcggggag ctcggggggt 100
 ctggggggccc gggccgcctt ctctcgaggt tggcaggaag ccaggttgca 150
 ggggtgtccc ttctcagtt ccagagaggt ggtatcgcat gtctccacgc 200
 ccatacgagg cctcagctac gttcaggggt gcacacaaaa gcattctaac 250
 agcaagactg tggggcagtg cctggagacc acagcacaga ggggtccaga 300
 acgagaggcc ttggtcgtcc tccatgaaga cgtcaggttg acctttgccc 350
 aactcaagga ggaggtggac aaagctgctt ctggcctcct gagcattggc 400

ctctgcaaag gtgaccggct gggcatgtgg ggacctaaact cctatgcatg 450
 ggtgctcatg cagttggcca ccgccaggc gggcatcatt ctggtgtctg 500
 tgaaccagc ctaccaggct atggaactgg agtatgtcct caagaaggtg 550
 ggctgcaagg ccttgtgtt ccccaagcaa ttcaagacc agcaatacta 600
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 ccttgaagag tcagaggctc ccagatctga ccacagtcat ctcggtggat 700
 gcccctttgc cggggacct gtcctggat gaagtgtgg cggtggcag 750
 cacacggcag catctggacc agctccaata caaccagcag ttctgtcct 800
 gccatgaccc catcaacatc cagttoacct cggggacaac aggcagcccc 850
 aagggggcca cctctccca ctacaacatt gtcaacaact ccaacatttt 900
 aggagagcgc ctgaaactgc atgagaagac accagagcag ttgaggatga 950
 ttctgcccc cccctgtac cattgcctgg gtccgtggc aggcacaatg 1000
 atgtgtctga tgtacgtgc caccctcatc ctggcctctc ccatcttcaa 1050
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 atgggtaccc caccatgttc gtggacatto tgaaccagcc agacttctcc 1150
 agttatgaca tctcgacat gtgtggaggt gtcattgtcg ggtcccctgc 1200
 acctccagag ttgatccgag ccatcatcaa caagataaat atgaaggacc 1250
 tgggtgttgc ttatggaacc acagagaaca gtcccgtgac attcgcgcac 1300
 ttccctgagg acaactgtga gcagaaggca gaaagcgtgg gcagaattat 1350
 gcctcacacg gaggccggga tcatgaacat ggaggcaggc acgctggcaa 1400
 agctgaacac gcccggggag ctgtgcatcc gagggtaact cgtcatgtcg 1450
 ggctactggg gtgagcctca gaagacagag gaagcagtgg atcaggacaa 1500
 gtggtatttg acaggagatg tcgccacaat gaatgagcag ggcttctgca 1550
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 agtgacaggt gtgggagtga aggacgatcg gatgggggaa gagatttgtg 1700
 cctgcatctg gctgaaggac ggggaggaga ccacggtgga ggagataaaa 1750
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 gttttgcaca aactaccccc tcaccatttc aggaaagato cagaaattca 1850
 aacttcgaga gcagatggaa cgacatctaa atctgtgaat aaagcagcag 1900
 gcctgtcctg gccggttggc ttgactctct cctgtcagaa tgcaacctgg 1950
 ctttatgcac ctatagttcc ccagcaccca gttctgagcc aggcacatca 2000

aatgtcaagg aattgactga acgaactaag agctcctgga tgggtccggg 2050
 aactgcgcctg ggcacaaggt gccaaaaggc aggcagcctg cccaggccct 2100
 ccctcctgtc catcccccac attccctgtg ctgtccttgg gatttggcat 2150
 aaagagcttc tgttttcttt gaaaaaaaaa aaaaaaa 2187

<210> 194
 <211> 615
 <212> PRT
 <213> Homo sapiens

<400> 194

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|
| Met | Ala | Val | Tyr | Val | Gly | Met | Leu | Arg | Leu | Gly | Arg | Leu | Cys | Ala | 1 | 5 | 10 | 15 |
| Gly | Ser | Ser | Gly | Val | Leu | Gly | Ala | Arg | Ala | Ala | Leu | Ser | Arg | Ser | 20 | 25 | 30 | |
| Trp | Gln | Glu | Ala | Arg | Leu | Gln | Gly | Val | Arg | Phe | Leu | Ser | Ser | Arg | 35 | 40 | 45 | |
| Glu | Val | Asp | Arg | Met | Val | Ser | Thr | Pro | Ile | Gly | Gly | Leu | Ser | Tyr | 50 | 55 | 60 | |
| Val | Gln | Gly | Cys | Thr | Lys | Lys | His | Leu | Asn | Ser | Lys | Thr | Val | Gly | 65 | 70 | 75 | |
| Gln | Cys | Leu | Glu | Thr | Thr | Ala | Gln | Arg | Val | Pro | Glu | Arg | Glu | Ala | 80 | 85 | 90 | |
| Leu | Val | Val | Leu | His | Glu | Asp | Val | Arg | Leu | Thr | Phe | Ala | Gln | Leu | 95 | 100 | 105 | |
| Lys | Glu | Glu | Val | Asp | Lys | Ala | Ala | Ser | Gly | Leu | Leu | Ser | Ile | Gly | 110 | 115 | 120 | |
| Leu | Cys | Lys | Gly | Asp | Arg | Leu | Gly | Met | Trp | Gly | Pro | Asn | Ser | Tyr | 125 | 130 | 135 | |
| Ala | Trp | Val | Leu | Met | Gln | Leu | Ala | Thr | Ala | Gln | Ala | Gly | Ile | Ile | 140 | 145 | 150 | |
| Leu | Val | Ser | Val | Asn | Pro | Ala | Tyr | Gln | Ala | Met | Glu | Leu | Glu | Tyr | 155 | 160 | 165 | |
| Val | Leu | Lys | Lys | Val | Gly | Cys | Lys | Ala | Leu | Val | Phe | Pro | Lys | Gln | 170 | 175 | 180 | |
| Phe | Lys | Thr | Gln | Gln | Tyr | Tyr | Asn | Val | Leu | Lys | Gln | Ile | Cys | Pro | 185 | 190 | 195 | |
| Glu | Val | Glu | Asn | Ala | Gln | Pro | Gly | Ala | Leu | Lys | Ser | Gln | Arg | Leu | 200 | 205 | 210 | |
| Pro | Asp | Leu | Thr | Thr | Val | Ile | Ser | Val | Asp | Ala | Pro | Leu | Pro | Gly | 215 | 220 | 225 | |
| Thr | Leu | Leu | Leu | Asp | Glu | Val | Val | Ala | Ala | Gly | Ser | Thr | Arg | Gln | 230 | 235 | 240 | |
| His | Leu | Asp | Gln | Leu | Gln | Tyr | Asn | Gln | Gln | Phe | Leu | Ser | Cys | His | | | | |

| | | |
|---|-----|-----|
| 245 | 250 | 255 |
| Asp Pro Ile Asn Ile Gln Phe Thr Ser Gly Thr Thr Gly Ser Pro | 260 | 270 |
| Lys Gly Ala Thr Leu Ser His Tyr Asn Ile Val Asn Asn Ser Asn | 275 | 285 |
| Ile Leu Gly Glu Arg Leu Lys Leu His Glu Lys Thr Pro Glu Gln | 290 | 300 |
| Leu Arg Met Ile Leu Pro Asn Pro Leu Tyr His Cys Leu Gly Ser | 305 | 315 |
| Val Ala Gly Thr Met Met Cys Leu Met Tyr Gly Ala Thr Leu Ile | 320 | 330 |
| Leu Ala Ser Pro Ile Phe Asn Gly Lys Lys Ala Leu Glu Ala Ile | 335 | 345 |
| Ser Arg Glu Arg Gly Thr Phe Leu Tyr Gly Thr Pro Thr Met Phe | 350 | 360 |
| Val Asp Ile Leu Asn Gln Pro Asp Phe Ser Ser Tyr Asp Ile Ser | 365 | 375 |
| Thr Met Cys Gly Gly Val Ile Ala Gly Ser Pro Ala Pro Pro Glu | 380 | 390 |
| Leu Ile Arg Ala Ile Ile Asn Lys Ile Asn Met Lys Asp Leu Val | 395 | 405 |
| Val Ala Tyr Gly Thr Thr Glu Asn Ser Pro Val Thr Phe Ala His | 410 | 420 |
| Phe Pro Glu Asp Thr Val Glu Gln Lys Ala Glu Ser Val Gly Arg | 425 | 435 |
| Ile Met Pro His Thr Glu Ala Arg Ile Met Asn Met Glu Ala Gly | 440 | 450 |
| Thr Leu Ala Lys Leu Asn Thr Pro Gly Glu Leu Cys Ile Arg Gly | 455 | 465 |
| Tyr Cys Val Met Leu Gly Tyr Trp Gly Glu Pro Gln Lys Thr Glu | 470 | 480 |
| Glu Ala Val Asp Gln Asp Lys Trp Tyr Trp Thr Gly Asp Val Ala | 485 | 495 |
| Thr Met Asn Glu Gln Gly Phe Cys Lys Ile Val Gly Arg Ser Lys | 500 | 510 |
| Asp Met Ile Ile Arg Gly Gly Glu Asn Ile Tyr Pro Ala Glu Leu | 515 | 525 |
| Glu Asp Phe Phe His Thr His Pro Lys Val Gln Glu Val Gln Val | 530 | 540 |
| Val Gly Val Lys Asp Asp Arg Met Gly Glu Glu Ile Cys Ala Cys | 545 | 555 |
| Ile Arg Leu Lys Asp Gly Glu Glu Thr Thr Val Glu Glu Ile Lys | | |

| | | |
|---|-------------------------|-----|
| 560 | 565 | 570 |
| Ala Phe Cys Lys Lys Lys Ile Ser His | Phe Lys Ile Pro Lys Tyr | |
| 575 | 580 | 585 |
| Ile Val Phe Val Thr Asn Tyr Pro Leu Thr Ile Ser Gly Lys Ile | | |
| 590 | 595 | 600 |
| Gln Lys Phe Lys Leu Arg Glu Gln Met | Glu Arg His Leu Asn Leu | |
| 605 | 610 | 615 |

<210> 195
 <211> 642
 <212> DNA
 <213> Homo sapiens

<400> 195
 caactccaac attttaggag agcgccctgaa actgcatgag aagacaccag 50
 agcagttgag gatgatcctg cccaaccccc tgtaccattg cctgggttcc 100
 gtggcaggca caatgatgtg tctgatgtac ggtgccaccc tcatcctggc 150
 ctctcccatc ttcaatggca agaaggcact ggaggccatc agcagagaga 200
 gaggcacatt cctgtatggt acccccacga tgttcgtgga cattctgaac 250
 cagccgaact totccagtta tgacatctcg accatgtgtg gaggtgtcat 300
 tgcctgggtc cctgcacctc cagagttgat ccgagccatc atcaacaaga 350
 taaatatgaa ggacotggtg gttgcttatg gaaccacaga gaacagtccc 400
 gtgacattcg cgcacttccc tgaggacact gtggagcaga aggcagaaaag 450
 cgtgggcaga attatgcctc acacggaggc gcgcatcatg aacatggagg 500
 cagggaagct ggcaaagctg aacacgcccg gggagctgtg catccgaggg 550
 tactgcgtca tgctgggcta ctggggtgag cctcagaaga cagaggaagc 600
 agtggatcag gacaagtggg attggacagg agatgtcgcc ac 642

<210> 196
 <211> 1575
 <212> DNA
 <213> Homo sapiens

<400> 196
 gagcaggacg gagccatgga ccccgccagg aaagcaggtg cccagggcat 50
 gatctggaact gcaggctggc tgetgtgtgt gctgottcgc ggaggagcgc 100
 aggccttgga gtgctacagc tgcgtgcaga aagcagatga cggatgtctc 150
 ccgaacaaga tgaagacagt gaagtgcgcg cggggcgtgg acgtctgcac 200
 cgaggccgtg ggggcggtgg agaccatcca cggacaattc tcgctggcag 250
 tgcgggggtg cggttcggga ctccccggca agaatagcgc cgccctggat 300
 ctccacgggc ttctggcggt catccagctg cagcaatgag ctccaggtatg 350

ctgcaacgcc aagctcaacc tcacctogcg ggcgctcgac ccggcaggt 400
 atgagagtgc ataccgccccc aacggcggtg agtgctacag ctgtgtgggc 450
 ctgagccggg aggcgtgcca gggatcatcg ccgccggtcg tgagctgcta 500
 caacgccagc gatcatgtct acaagggctg ctcgacggc aacgtcaact 550
 tgacggcagc taatgtgact gtgtccttgc ctgtccgggg ctgtgtccag 600
 gatgaattct gcaactcgga tggagtaaca ggcccaggg tcaagctcag 650
 tggctctctg tgccaggggt ccgctgtaa ctctgacct cgcaacaaga 700
 cctacttctc cctcogaatc ccaccccttg tccggctgcc ccctccagag 750
 cccacgactg tggcctcaac cacatctgtc accacttcta cctcggcccc 800
 agtgagaccc acatccacca ccaaaccocat gccagcgcca accagtcaga 850
 ctccgagaca gggagtagaa cacgaggcct cccgggatga ggagcccagg 900
 ttgactggag ggcgctggtg ccaccaggac cgcagcaatt cagggcagta 950
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 tagccagcct ggactttgga gcgtgggggt ggtgggacaa tggctcccca 1450
 ctctaagcac tgccctccct actccccgca tctttgggga atcggtcccc 1500
 catatgtctt cttactaga ctgtgagctc ctcgaggggg ggcccgtac 1550
 ccaattcgcc ctatagtga togta 1575

<210> 197
 <211> 346
 <212> PRT
 <213> Homo sapiens

<400> 197
 Met Asp Pro Ala Arg Lys Ala Gly Ala Gln Ala Met Ile Trp Thr
 1 5 10 15
 Ala Gly Trp Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala
 20 25 30
 Leu Glu Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser

[illegible]

<210> 198
<211> 1657
<212> DNA
<213> Homo sapiens

<400> 198
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gtctcggcca gtgcagctga aaaggagaag gaaatggacc cttttcatta 150
tgattaccag accctgagga ttgggggact ggtgttcgct gtggtcctct 200
tctcgttggt gatcctcctt atcctaagtc gcagggtgcaa gtgcagtttc 250
aatcagaagc cccgggcccc aggagatgag gaagcccagg tggaacacct 300
catcaccgcc aatgcaacag agccccagaa gcagagaact gaagtgcagc 350
catcaggtag aagcctctggt aacctgaggtc ggctgcttga acctttggat 400
gcaaattgctg atgcttaaga aaaccggcca cttcagcaac agccctttcc 450
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cattcctcca cctgatgatg caactaacac ttgctcccc actgcagcct 550
gggtcctcgc ccacctcccg tgatgtgtgt gtgtgtgtgt gtgtgtgact 600
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ttgtgtttgt tagtgaactg tggactcgtt tcccaggca ggggctgagc 700
cacatggcca tctgctctc cctgcccccg tggccctcca tcacctctg 750
ctcctaggag gctgcttggt gcccgagacc agccccctcc cctgatttag 800
ggatgcgtag ggtaagagca cgggcagtag tcttcagtcg tcttgggacc 850
tggaagaggt tgacgactt tgtcatcatt ctcatggac tctttcact 900
cctttaacaa aaaccttgct tcttatccc acctgatccc agtctgaagg 950
tctcttagca actggagata caaagcaagg agctggtgag ccagcgttg 1000
acgtcaggca ggctatgcc ttccgtggtt aattttcttc cagggggttc 1050
cacgaggagt ccccatctgc cccgcccctt cacagagcgc cgggggattc 1100
caggcccagg gcttctactc tgccccctggg gaatgtgtcc cctgcatatc 1150
ttctcagcaa taactccatg ggctctggga cctaccctt tccaaacctc 1200
cctgctcttg agaactcaat ctacagccca gctcatccag atgcagacta 1250
cagtcctcgc aattgggtct ctggcaggca atagttgaag gactcctggt 1300
ccgttggggc cagcacaccg ggatggatgg agggagagca gaggcctttg 1350
cttctctgac taogtccct tagatgggca gcagaggcaa ctccgcgcatc 1400

ctttgctctg cctgtcgggtg gtcagagcgg tgagcgaggt gggttggaga 1450
 ctcagcagcgc tccgtgcagc ccttggaac agtgagaggt tgaaggtcat 1500
 aacgagagtg ggaactcaac ccagatcccg ccctctctgt cctctgtgtt 1550
 cccgcggaaa ccaacaaac cgtgcgctgt gacccattgc tgttctctgt 1600
 atcgtgatct atcctcaaca acaacagaaa aaaggaataa aatatccttt 1650
 gtttct 1657

<210> 199
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 199
 Met Glu Leu Val Leu Val Phe Leu Cys Ser Leu Leu Ala Pro Met 15
 1 5 10
 Val Leu Ala Ser Ala Ala Glu Lys Glu Lys Glu Met Asp Pro Phe 30
 20 25
 His Tyr Asp Tyr Gln Thr Leu Arg Ile Gly Gly Leu Val Phe Ala 45
 35 40
 Val Val Leu Phe Ser Val Gly Ile Leu Leu Ile Leu Ser Arg Arg 60
 50 55
 Cys Lys Cys Ser Phe Asn Gln Lys Pro Arg Ala Pro Gly Asp Glu 75
 65 70
 Glu Ala Gln Val Glu Asn Leu Ile Thr Ala Asn Ala Thr Glu Pro 90
 80 85
 Gln Lys Gln Arg Thr Glu Val Gln Pro Ser Gly Gly Ser Leu Trp 105
 95 100
 Asn Leu Arg Arg Leu Leu Glu Pro Leu Asp Ala Asn Val Asp Ala 120
 110 115

<210> 200
 <211> 415
 <212> DNA
 <213> Homo sapiens

<400> 200
 aaacttgacg ccatgaagat ccggtcctt cctgcggtg tgctcctctc 50
 cctcctggtg ctccactctg cccaggagc caccctgggt ggtctgagg 100
 aagaagac cattgagaat tatgcgtcac gaccogagcg cttaacacc 150
 ccgttcctga acatcgacaa attgcgatct gcgtttaag ctgatgagtt 200
 cctgaactgg cagccctct ttgagtctat caaaaggaaa ctctctttcc 250
 tcaactggga tgcccttct aagctgaaag gactgaggag cgcaactcct 300
 gatgccagtg gaccatgacc tccactggaa gagggggcta gcgtgagcgc 350
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<210> 201

<211> 99

<212> PRT

<213> Homo sapiens

<400> 201

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Ile | Pro | Val | Leu | Pro | Ala | Val | Val | Leu | Leu | Ser | Leu | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Leu | His | Ser | Ala | Gln | Gly | Ala | Thr | Leu | Gly | Gly | Pro | Glu | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Glu | Ser | Thr | Ile | Glu | Asn | Tyr | Ala | Ser | Arg | Pro | Glu | Ala | Phe | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Thr | Pro | Phe | Leu | Asn | Ile | Asp | Lys | Leu | Arg | Ser | Ala | Phe | Lys | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Glu | Phe | Leu | Asn | Trp | His | Ala | Leu | Phe | Glu | Ser | Ile | Lys | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Leu | Pro | Phe | Leu | Asn | Trp | Asp | Ala | Phe | Pro | Lys | Leu | Lys | Gly |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Leu | Arg | Ser | Ala | Thr | Pro | Asp | Ala | Gln | | | | | | |
| | | | | 95 | | | | | | | | | | |

<210> 202

<211> 678

<212> DNA

<213> Homo sapiens

<400> 202

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acaggtccca aggccatggg agatctctcc tgtggctttg cgggcaactc 200
atgagagtgt ttttgtgtaa agtatTTTTT agaatactgt tgacttcttc 250
atgatttaat aaccatcctt tgcaagttt tatgaggctt taggggaatg 300
tcaaccctca aatttttgtt atactagatg gcttccattt acccaccact 350
attttaaggT ccctttatTT ttaggttcaa ggttcatttg acttgagaaa 400
gtgcccttct gcagcttcat tgattttgtt tatcttcoact attaatgtga 450
acgattaaaa aagaataaga gcacgcagac ctctaggaga atattttatc 500
cctgggtgcc cctgacacat ttatgtagtg atcccacaaa tgtgattgtt 550
aatttaaatg ttatttctaatt attagtacat tcagttgtga tgtaatatga 600
ataaccagaa totatttctt aaaagttttg agtatatttt tcaactagat 650
atttgtatag aaagactgaa tagtgatg 678

<210> 203
 <211> 52
 <212> PRT
 <213> Homo sapiens

<400> 203
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 20 25 30
 Val Pro Thr Gln Glu Thr Gly Pro Lys Ala Met Gly Asp Leu Ser
 35 40 45
 Cys Gly Phe Ala Gly His Ser
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 <211> 1917
 <212> DNA
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 agaaggagtc aggttcaaaa tggaaagtat ttattgacca aattaacagg 150
 tctttggaga attacgaacc atgttcaagt caaaactgca gctgctacca 200
 tgggtgcata gaagaggatc taactccttt ccgaggaggc atctccagga 250
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 actaagaaca gactgtaccg ggaaaatgac tgcattgttc cctcaagggtg 350
 tagtggtgtt gagcacttta ttttggaaat gatcgggctg ctccctgaca 400
 tggagatggt gatcaatgta cgagattatc ctgaggttcc taaatggatg 450
 gagcctgccca tcccagtctt ctcttcctagt aagacatcag agtaccatga 500
 tatcatgtat cctgcttgga catctttggga agggggacat gctgtttggc 550
 caattattcc tacagggtctt ggacggtggg acctctctcag agaagatctg 600
 gtaaggctcag cagcacagtg gccatggaaa aagaaaaact ctacagcata 650
 tttccgagga tcaaggacaa gtccagaaac agatcctctc attctctctg 700
 ctcggaaaaa cccaaaactt gttgatgcag aatacaccaa aaaccaggcc 750
 tggaaatcta tgaaagatac cttaggaaag ccagctgcta aggatgtcca 800
 tcttggtgat cactgcaaat acaagtatct gtttaatttt cgaggcgtag 850
 ctgcaagtgt ccggtttaaa cactctcttc tgtgtggctc acttggtttc 900
 catgttggtg atgagtggtc agaattcttc tatccacaga tgaagccatg 950
 ggttcactat atccagtc aacagatct ctccaatgtc caagagctgt 1000

tacaatttgt aaaagcaaat gatgatgtag ctcaagagat tgctgaaagg 1050
ggaagccagt ttattaggaa ccatttgcag atggatgaca tcacctgtta 1100
ctgggagaac ctcttgatg aatactctaa attcctgtct tataatgtaa 1150
cgagaaggaa aggttatgat caaattattc ccaaatgtt gaaaactgaa 1200
ctatagtagt catcatagga ccatagtcct ctttgtggca acagatctca 1250
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aatgatgtag gagttctctt ttgtaaaacc ataaactctg ttactcagga 1800
ggtttctata atgccacata gaaagaggcc aattgcatga gtaattattg 1850
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gcctctctaa agccaaa 1917

<210> 205
<211> 392
<212> PRT
<213> Homo sapiens

<400> 205
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Phe Leu Leu Pro Ser Ala Gln Gly Arg Gln Lys Glu Ser Gly Ser
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Lys Trp Lys Val Phe Ile Asp Gln Ile Asn Arg Ser Leu Glu Asn
35 40 45
Tyr Glu Pro Cys Ser Ser Gln Asn Cys Ser Cys Tyr His Gly Val
50 55 60
Ile Glu Glu Asp Leu Thr Pro Phe Arg Gly Gly Ile Ser Arg Lys
65 70 75
Met Met Ala Glu Val Val Arg Arg Lys Leu Gly Thr His Tyr Gln
80 85 90
Ile Thr Lys Asn Arg Leu Tyr Arg Glu Asn Asp Cys Met Phe Pro

<211> 1425
 <212> DNA
 <213> Homo sapiens

<400> 206
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 tttaacctcc ttccggccact tcttgaggag atcccgaggt ctggtggtcc 150
 ggaatgccgc cagggatggc tggctgccct gcaggaccgc agcatccttg 200
 cccccctggc atgggatctg gggctcctgc ttctatttgt tgggcagcac 250
 agcctcatgg cagctgaaag agtgaaggca tggacatccc ggtaactttg 300
 ggtccttcag aggtcactgt atgtggcctg cactgccctg gccttgacgc 350
 tggatgatgc gtactgggag ccataccca aaggccctgt gttgtgggag 400
 gctcgggctg agccatgggc cactgggtg ccgctcctct gctttgtgct 450
 ccattgtcac tcttggtctc tcatcttttag catccttctc gtctttgact 500
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 cctgcgcacc ccagtgtgtg tggagctgct gacagtgtg tgggtggtgc 650
 ctaccctggg ccaggaccgt ctctccttg ctttctctct taccctctac 700
 ctgggctctg ctccagggtc tgatcagcaa gacotccgt acctccgggc 750
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 cagagtggg agctcactct ggttacaagc cctgttcttc ctctccact 850
 gaattctaaa tcttaacat ccaggccctg gctgcttcat gccagaggcc 900
 caaatccatg gactgaagga gatgccctt ctactacttg agactttatt 950
 ctctgggtcc agctccatac cctaaattct gagtttcagc cactgaactc 1000
 caaggctcac ttctaccag caaggaagag tggggtatgg aagtcatctg 1050
 tcccttact gtttagagca tgacactctc cccctcaaca gcctcctgag 1100
 aaggaaagga tetgccctga ccactccctt ggcaactgta cttgctctg 1150
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 accagggtct gcaagttcaa cggctatagc tgtccctoca ggcccaacc 1250
 ttgcctcacc actccgggc ctagtctctg cactcctta ggccctgct 1300
 ctgggctcag accccaacct agtcaagggg attctcctgc tcttaactcg 1350
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 aaagtcagcc tttttctaaa aaaaa 1425

<210> 207
 <211> 262
 <212> PRT
 <213> Homo sapiens

<400> 207

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Pro | Ala | Leu | Leu | Ile | Pro | Ala | Ala | Leu | Ala | Ser | Phe | |
| 1 | | | | 5 | | | | 10 | | | | | 15 | |
| Ile | Leu | Ala | Phe | Gly | Thr | Gly | Val | Glu | Phe | Val | Arg | Phe | Thr | Ser |
| | | | | 20 | | | | 25 | | | | | | 30 |
| Leu | Arg | Pro | Leu | Leu | Gly | Gly | Ile | Pro | Glu | Ser | Gly | Gly | Pro | Asp |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Ala | Arg | Gln | Gly | Trp | Leu | Ala | Ala | Leu | Gln | Asp | Arg | Ser | Ile | Leu |
| | | | | 50 | | | | 55 | | | | | | 60 |
| Ala | Pro | Leu | Ala | Trp | Asp | Leu | Gly | Leu | Leu | Leu | Phe | Val | Gly | |
| | | | | 65 | | | | 70 | | | | | | 75 |
| Gln | His | Ser | Leu | Met | Ala | Ala | Glu | Arg | Val | Lys | Ala | Trp | Thr | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Arg | Tyr | Phe | Gly | Val | Leu | Gln | Arg | Ser | Leu | Tyr | Val | Ala | Cys | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Leu | Ala | Leu | Gln | Leu | Val | Met | Arg | Tyr | Trp | Glu | Pro | Ile | Pro |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Lys | Gly | Pro | Val | Leu | Trp | Glu | Ala | Arg | Ala | Glu | Pro | Trp | Ala | Thr |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Trp | Val | Pro | Leu | Leu | Cys | Phe | Val | Leu | His | Val | Ile | Ser | Trp | Leu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Ile | Phe | Ser | Ile | Leu | Leu | Val | Phe | Asp | Tyr | Ala | Glu | Leu | Met |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Leu | Lys | Gln | Val | Tyr | Tyr | His | Val | Leu | Gly | Leu | Gly | Glu | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ala | Leu | Lys | Ser | Pro | Arg | Ala | Leu | Arg | Leu | Phe | Ser | His | Leu |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | His | Pro | Val | Cys | Val | Glu | Leu | Leu | Thr | Val | Leu | Trp | Val | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Pro | Thr | Leu | Gly | Thr | Asp | Arg | Leu | Leu | Leu | Ala | Phe | Leu | Leu | Thr |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Tyr | Leu | Gly | Leu | Ala | His | Gly | Leu | Asp | Gln | Gln | Asp | Leu | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Tyr | Leu | Arg | Ala | Gln | Leu | Gln | Arg | Lys | Leu | His | Leu | Leu | Ser | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Pro | Gln | Asp | Gly | Glu | Ala | Glu | | | | | | | | |
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<210> 208
 <211> 2095
 <212> DNA

<213> Homo sapiens

<400> 208

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caacaaaaaa cttaagcttt aatttcctct ggaattccac agttttctta 200
gtccctctga ccgggtgac ctgttggtct tcccgctgg ctgctctatc 250
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gagtaggatg tcactgagat ccctcaaatg gagcctcctg ctgctgtcac 400
tcttgagttt ctttgtgatg tggtaacctc gccttcccca ctacaatgtg 450
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tgaggttctt acatttttct tattaggcca agaggctgaa aaggaagaca 700
aaatgttggc attgtcctta gaggatgaac accttcttta tggtagcata 750
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 caagataaaa aggatagtga atcattcttt acatgcaaac attttccagt 1950
 tacttaactg atcagtttat tattgataca tcactocatt aatgtaaagt 2000
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<210> 209
 <211> 331
 <212> PRT
 <213> Homo sapiens

<400> 209
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 35 40 45
 Arg Val Asn Trp Met Tyr Phe Tyr Glu Tyr Glu Pro Ile Tyr Arg
 50 55 60
 Gln Asp Phe His Phe Thr Leu Arg Glu His Ser Asn Cys Ser His
 65 70 75
 Gln Asn Pro Phe Leu Val Ile Leu Val Thr Ser His Pro Ser Asp
 80 85 90
 Val Lys Ala Arg Gln Ala Ile Arg Val Thr Trp Gly Glu Lys Lys
 95 100 105
 Ser Trp Trp Gly Tyr Glu Val Leu Thr Phe Phe Leu Leu Gly Gln
 110 115 120
 Glu Ala Glu Lys Glu Asp Lys Met Leu Ala Leu Ser Leu Glu Asp
 125 130 135
 Glu His Leu Leu Tyr Gly Asp Ile Ile Arg Gln Asp Phe Leu Asp
 140 145 150
 Thr Tyr Asn Asn Leu Thr Leu Lys Thr Ile Met Ala Phe Arg Trp
 155 160 165

Val Thr Glu Phe Cys Pro Asn Ala Lys Tyr Val Met Lys Thr Asp
170 175 180

Thr Asp Val Phe Ile Asn Thr Gly Asn Leu Val Lys Tyr Leu Leu
185 190 195

Asn Leu Asn His Ser Glu Lys Phe Phe Thr Gly Tyr Pro Leu Ile
200 205 210

Asp Asn Tyr Ser Tyr Arg Gly Phe Tyr Gln Lys Thr His Ile Ser
215 220 225

Tyr Gln Glu Tyr Pro Phe Lys Val Phe Pro Pro Tyr Cys Ser Gly
230 235 240

Leu Gly Tyr Ile Met Ser Arg Asp Leu Val Pro Arg Ile Tyr Glu
245 250 255

Met Met Gly His Val Lys Pro Ile Lys Phe Glu Asp Val Tyr Val
260 265 270

Gly Ile Cys Leu Asn Leu Leu Lys Val Asn Ile His Ile Pro Glu
275 280 285

Asp Thr Asn Leu Phe Phe Leu Tyr Arg Ile His Leu Asp Val Cys
290 295 300

Gln Leu Arg Arg Val Ile Ala Ala His Gly Phe Ser Ser Lys Glu
305 310 315

Ile Ile Thr Phe Trp Gln Val Met Leu Arg Asn Thr Thr Cys His
320 325 330

Tyr

<210> 210
<211> 745
<212> DNA
<213> Homo sapiens

<400> 210
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gtgtcaacaa tgaacacaat gtggccaatg ttgacaataa caacggatgg 200
gactcctgga attccatctg ggattatgga aatggctttg ctgcaaccag 250
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cccaaacaaa gtcgatgacc tgagcaagtt cggaaaaaac attgcaacaa 450
tgtgtogtgg gattccaaca tacatggctg aggagatgca agaggcaagc 500
ctgttttttt actcaggaac gtgctacacg accagtgtag tatggattgt 550

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 gccactatgg atttagtcat ctgaatatgc tgtgcagaaa aaatatgggc 650
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<210> 211
 <211> 185
 <212> PRT
 <213> Homo sapiens

<400> 211
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 35 40 45
 His Asn Val Ala Asn Val Asp Asn Asn Asn Gly Trp Asp Ser Trp
 50 55 60
 Asn Ser Ile Trp Asp Tyr Gly Asn Gly Phe Ala Ala Thr Arg Leu
 65 70 75
 Phe Gln Lys Lys Thr Cys Ile Val His Lys Met Asn Lys Glu Val
 80 85 90
 Met Pro Ser Ile Gln Ser Leu Asp Ala Leu Val Lys Glu Lys Lys
 95 100 105
 Leu Gln Gly Lys Gly Pro Gly Gly Pro Pro Lys Gly Leu Met
 110 115 120
 Tyr Ser Val Asn Pro Asn Lys Val Asp Asp Leu Ser Lys Phe Gly
 125 130 135
 Lys Asn Ile Ala Asn Met Cys Arg Gly Ile Pro Thr Tyr Met Ala
 140 145 150
 Glu Glu Met Gln Glu Ala Ser Leu Phe Phe Tyr Ser Gly Thr Cys
 155 160 165
 Tyr Thr Thr Ser Val Leu Trp Ile Val Asp Ile Ser Phe Cys Gly
 170 175 180
 Asp Thr Val Glu Asn
 185

<210> 212
 <211> 1706
 <212> DNA
 <213> Homo sapiens

<400> 212
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 tacagaagta tattaacttt ttaggagtaa tttctagttt ggattgtaat 100

aaaagt 1706

<210> 213

<211> 299

<212> PRT

<213> Homo sapiens

<400> 213

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| Met | Asn | Asp | Ser | Leu | Arg | Thr | Asn | Val | Phe | Val | Arg | Phe | Gln | Pro |
| 1 | | | 5 | | | | | | 10 | | | | | 15 |
| Glu | Thr | Ile | Ala | Cys | Ala | Cys | Ile | Tyr | Leu | Ala | Ala | Arg | Ala | Leu |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Gln | Ile | Pro | Leu | Pro | Thr | Arg | Pro | His | Trp | Phe | Leu | Leu | Phe | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Thr | Thr | Glu | Glu | Glu | Ile | Gln | Glu | Ile | Cys | Ile | Glu | Thr | Leu | Arg |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Leu | Tyr | Thr | Arg | Lys | Lys | Pro | Asn | Tyr | Glu | Leu | Leu | Glu | Lys | Glu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Glu | Lys | Arg | Lys | Val | Ala | Leu | Gln | Glu | Ala | Lys | Leu | Lys | Ala |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Lys | Gly | Leu | Asn | Pro | Asp | Gly | Thr | Pro | Ala | Leu | Ser | Thr | Leu | Gly |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Gly | Phe | Ser | Pro | Ala | Ser | Lys | Pro | Ser | Ser | Pro | Arg | Glu | Val | Lys |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Ala | Glu | Glu | Lys | Ser | Pro | Ile | Ser | Ile | Asn | Val | Lys | Thr | Val | Lys |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Lys | Glu | Pro | Glu | Asp | Arg | Gln | Gln | Ala | Ser | Lys | Ser | Pro | Tyr | Asn |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Gly | Val | Arg | Lys | Asp | Ser | Lys | Arg | Ser | Arg | Asn | Ser | Arg | Ser | Ala |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Ser | Arg | Ser | Arg | Ser | Arg | Thr | Arg | Ser | Arg | Ser | Arg | Ser | His | Thr |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Pro | Arg | Arg | His | Tyr | Asn | Asn | Arg | Arg | Ser | Arg | Ser | Gly | Thr | Tyr |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Ser | Ser | Arg | Ser | Arg | Ser | Arg | Ser | Arg | Ser | His | Ser | Glu | Ser | Pro |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Arg | Arg | His | His | Asn | His | Gly | Ser | Pro | His | Leu | Lys | Ala | Lys | His |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Thr | Arg | Asp | Asp | Leu | Lys | Ser | Ser | Asn | Arg | His | Gly | His | Lys | Arg |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Lys | Lys | Ser | Arg | Ser | Arg | Ser | Gln | Ser | Lys | Ser | Arg | Asp | His | Ser |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Asp | Ala | Ala | Lys | Lys | His | Arg | His | Glu | Arg | Gly | His | His | Arg | Asp |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Arg | Arg | Glu | Arg | Ser | Arg | Ser | Phe | Glu | Arg | Ser | His | Lys | Ser | Lys |

His His Gly Gly Ser Arg Ser Gly His Gly Arg His Arg Arg
290 295

<210> 214

<211> 730

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> 72-73, 85, 91, 127, 226, 268, 454, 484, 513, 566, 663

<223> unknown base

<400> 214

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ggattgtaat atgaaattat ttaaaagggc ttcgctcata tataggaaaa 200
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ttaagagttg ttatatgnta gaatatgagg atgtgaatat aaataagaga 300
agaaaaaaga ataaagtaga ttgagtctcc aattttatgt aagcttcaga 350
agaactgggt tgtttacatg caagcttata gttgaaatat ttttcaggaa 400
ttacatgaat gacagtcttc gaaccaatgt gtttgttcga tttcaaccag 450
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agccaaaacta tgaattactg gaaaaagaag tagaaaaag aaaagtagcc 650
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<210> 215

<211> 1807

<212> DNA

<213> Homo sapiens

<400> 215

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ccacctcat gcacaggctg gcgcacact gctccttcgc gcgctggctg 150
ctctgtaacg gcagtttggt cagatataag caccctgtctg aggaggagct 200
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<211> 479
 <212> PRT
 <213> Homo sapiens

<400> 216

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Val | Leu | Gly | Val | Gln | Leu | Val | Val | Thr | Leu | Leu | Thr | Ala |
| 1 | | | | 5 | | | | | | 10 | | | | 15 |
| Thr | Leu | Met | His | Arg | Leu | Ala | Pro | His | Cys | Ser | Phe | Ala | Arg | Trp |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Leu | Cys | Asn | Gly | Ser | Leu | Phe | Arg | Tyr | Lys | His | Pro | Ser | Glu |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Glu | Glu | Leu | Arg | Ala | Leu | Ala | Gly | Lys | Pro | Arg | Pro | Arg | Gly | Arg |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Lys | Glu | Arg | Trp | Ala | Asn | Gly | Leu | Ser | Glu | Glu | Lys | Pro | Leu | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Val | Pro | Arg | Asp | Ala | Pro | Phe | Gln | Leu | Glu | Thr | Cys | Pro | Leu | Thr |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Thr | Val | Asp | Ala | Leu | Val | Leu | Arg | Phe | Phe | Leu | Glu | Tyr | Gln | Trp |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Phe | Val | Asp | Phe | Ala | Val | Tyr | Ser | Gly | Gly | Val | Tyr | Leu | Phe | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Ala | Tyr | Tyr | Tyr | Met | Leu | Gly | Pro | Ala | Lys | Glu | Thr | Asn | Ile |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Val | Phe | Trp | Cys | Leu | Leu | Thr | Val | Thr | Phe | Ser | Ile | Lys | Met |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Leu | Thr | Val | Thr | Arg | Leu | Tyr | Phe | Ser | Ala | Glu | Glu | Gly | Gly |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Glu | Arg | Ser | Val | Cys | Leu | Thr | Phe | Ala | Phe | Leu | Phe | Leu | Leu | Leu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ala | Met | Leu | Val | Gln | Val | Val | Arg | Glu | Glu | Thr | Leu | Glu | Leu | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Leu | Glu | Pro | Gly | Leu | Ala | Ser | Met | Thr | Gln | Asn | Leu | Glu | Pro | Leu |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Leu | Lys | Lys | Gln | Gly | Trp | Asp | Trp | Ala | Leu | Pro | Val | Ala | Lys | Leu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ala | Ile | Arg | Val | Gly | Leu | Ala | Val | Val | Gly | Ser | Val | Leu | Gly | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Phe | Leu | Thr | Phe | Pro | Gly | Leu | Arg | Leu | Ala | Gln | Thr | His | Arg | Asp |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Ala | Leu | Thr | Met | Ser | Glu | Asp | Arg | Pro | Met | Leu | Gln | Phe | Leu | Leu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| His | Thr | Ser | Phe | Leu | Ser | Pro | Leu | Phe | Ile | Leu | Trp | Leu | Trp | Thr |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Lys | Pro | Ile | Ala | Arg | Asp | Phe | Leu | His | Gln | Pro | Pro | Phe | Gly | Glu |

| 290 | 295 | 300 |
|-------------------------------------|-------------------------|-----|
| Thr Arg Phe Ser Leu Leu Ser Asp Ser | Ala Phe Asp Ser Gly Arg | |
| 305 | 310 | 315 |
| Leu Trp Leu Leu Val Val Leu Cys Leu | Leu Arg Leu Ala Val Thr | |
| 320 | 325 | 330 |
| Arg Pro His Leu Gln Ala Tyr Leu Cys | Leu Ala Lys Ala Arg Val | |
| 335 | 340 | 345 |
| Glu Gln Leu Arg Arg Glu Ala Gly Arg | Ile Glu Ala Arg Glu Ile | |
| 350 | 355 | 360 |
| Gln Gln Arg Val Val Arg Val Tyr Cys | Tyr Val Thr Val Val Ser | |
| 365 | 370 | 375 |
| Leu Gln Tyr Leu Thr Pro Leu Ile Leu | Thr Leu Asn Cys Thr Leu | |
| 380 | 385 | 390 |
| Leu Leu Lys Thr Leu Gly Gly Tyr Ser | Trp Gly Leu Gly Pro Ala | |
| 395 | 400 | 405 |
| Pro Leu Leu Ser Pro Asp Pro Ser Ser | Ala Ser Ala Ala Pro Ile | |
| 410 | 415 | 420 |
| Gly Ser Gly Glu Asp Glu Val Gln Gln | Thr Ala Ala Arg Ile Ala | |
| 425 | 430 | 435 |
| Gly Ala Leu Gly Gly Leu Leu Thr Pro | Leu Phe Leu Arg Gly Val | |
| 440 | 445 | 450 |
| Leu Ala Tyr Leu Ile Trp Trp Thr Ala | Ala Cys Gln Leu Leu Ala | |
| 455 | 460 | 465 |
| Ser Leu Phe Gly Leu Tyr Phe His Gln | His Leu Ala Gly Ser | |
| 470 | 475 | |

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 <211> 574
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 5, 146
 <223> unknown base

<400> 217
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 gctggtgct ctgtaacggc agtttgttcc gataacaagc cccgtnttga 150
 ggaggagctt cgggccctgg cggggaagcc gaggccaga ggcagaaaag 200
 agcgtgtggc caatggcctt agtgaggaga agccactgtc tgtgccccga 250
 gatgccccgt tccagctgga gacctgcccc ctcacgaccg tggatgccct 300
 ggtcctgcgc ttcttctgag agtaccagtg gtttgtggac tttgctgtgt 350

actcggggcg cgtgtacctc ttcacagagg cctactacta catgctggga 400
ccagccaagg agactaacat tgctgtgttc tgggtcctgc tcacagtgc 450
cttctccatc aagatgttcc tgacagtgc acggctgtac ttcagcgccg 500
aggagggggg tgagcgctct gtctgcctca cctttgcctt cctcttctcg 550
ctgctggcca tgctggtgca agcg 574

<210> 218
<211> 2571
<212> DNA
<213> Homo sapiens

<400> 218
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ttgtgatcta ctgattgtgg gggcatggca aggtttgctt aaaggagctt 150
ggctgggttg ggcctctgta gctgacagaa ggtggccagg gagaatgcag 200
cacactgctc ggagaatgaa ggcgcttctg ttgctggtct tgccttggtc 250
cagtcctgct aactacattg acaatgtggg caacctgcac ttcctgtatt 300
cagaactctg taaagggtgc tccactacag gcctgaccaa agatagggaag 350
aggcgctcac aagatggctg tcacagcggc tgtgcgagcc tcacagccac 400
ggctccctcc ccagaggttt ctgcagctgc caccatctcc ttaatgacag 450
acgagcctcg cctagacaa cctgcctacg tgtcctcggc agaggacggg 500
cagccagcaa tcagcccagt ggaactctggc cggagcaacc gaactagggc 550
acggcccttt gagagatcca ctattagaag cagatcattt aaaaaaataa 600
atcgagcttt gagtgtctt cgaaggacaa agagcgggag tgcagttgcc 650
aaccatgccg accagggcag ggaaaattct gaaaacacca ctgcccttga 700
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ggaggtagcg aaaccccact ggtccatata attatccaac acatttatcg 850
tgatgggggt atcgccagag acggccggct actgccagga gacatcattc 900
taaagggtcaa cgggatggac atcagcaatg tccttcacaa ctacgctgtg 950
cgtctctcgc gccagccctg ccagggtgct tggctgactg tgatgcgtga 1000
acagaagttc cgcagcagga acaatggaca ggccccgat gcctacagac 1050
ccagagatga cagctttcat gtgattctca acaaaagtag ccccgaggag 1100
cagcttgga taaaactggg gcgcaagggt gatgagcctg gggttttcat 1150
cttcaatgtg ctggatggcg gtgtggcata tcgacatggt cagcttgagg 1200

| | | | | | |
|------------|-------------|------------|-------------|-------------|------|
| agaatgacg | cggtgttagcc | atcaatggac | atgatcttcg | atatggcage | 1250 |
| ccagaaagt | cggtcatct | gattcaggcc | agtgaagac | gtgttcacct | 1300 |
| cgctgtg | cgccaggttc | ggcagcgag | ccctgacatc | tttcaggag | 1350 |
| ccggctgga | cagcaatggc | agctgggtcc | caggggccag | ggagaggagc | 1400 |
| aaacactcca | agccctcca | tcctacaatt | acttgatg | agaaggtgt | 1450 |
| aaatatcaa | aaagaccccg | gtgaatctct | cgcatgacc | gtcgacggg | 1500 |
| gagcatcaca | tagagaatgg | gatttgcta | tctatgcat | cagtgttgag | 1550 |
| cccgaggag | tcataagcag | agatggaaga | ataaaacag | gtgacattt | 1600 |
| gttgaatgtg | gatggggtcg | aactgacaga | ggtcagccgg | agtgaggcag | 1650 |
| tggcattatt | gaaaagaaca | tcactctcga | tagtactcaa | agctttggaa | 1700 |
| gtcaaagagt | atgagcccca | ggaagatgc | agcagcccag | cagccctgga | 1750 |
| ctccaccacc | aacatggccc | caccagtgta | ctgggtccca | tcctgggtca | 1800 |
| tgtggctgga | attaccacgg | tgtgtgtata | actgtaaaga | tattgtatta | 1850 |
| cgaagaaaca | cagctggaag | tctgggcttc | tgcatgttag | gaggttatga | 1900 |
| agaatacaat | ggaacaaac | cttttttcat | caaatccatt | gttgaaggaa | 1950 |
| caccagcata | caatgatgga | agaattagat | gtggtgatat | tcttcttgct | 2000 |
| gtcaatggt | gaagtacatc | aggaatgata | catgcttgct | tgccaagact | 2050 |
| gctgaaagaa | cttaaggga | gaattactct | aactattggt | tcttggcctg | 2100 |
| gcactttttt | atagaatcaa | tgatgggtca | gaggaaaaca | gaaaaatcac | 2150 |
| aaataggcta | agaagttgaa | acactatatt | tatcttgta | gtttttatat | 2200 |
| ttaaagaaag | aatacattgt | aaaaatgtca | ggaaaagtat | gatcatctaa | 2250 |
| tgaagaccag | ttacacctca | gaaaatatga | ttccaaaaaa | attaaaacta | 2300 |
| ctagtttttt | ttcagtggtg | aggattttct | attactctac | aacattgttt | 2350 |
| atattttttc | tattcaataa | aaagccctaa | aacaactaaa | atgattgatt | 2400 |
| tgtatacccc | actgaattca | agctgattta | aattttaaata | ttggatatatg | 2450 |
| ctgaagtctg | ccaagggcta | attatggcca | tttttaattt | acagctaaaa | 2500 |
| tattttttta | aatgcattgc | tgaaaacgt | tgcttctatc | aaacaagaat | 2550 |
| aaatattttt | caqaagttaa | a | 2571 | | |

| 1 | 5 | 10 | 15 |
|-----------------|-------------|-----------------|-----------------|
| Asn Tyr Ile Asp | Asn Val Gly | Asn Leu His Phe | Leu Tyr Ser Glu |
| | 20 | 25 | 30 |
| Leu Cys Lys Gly | Ala Ser His | Tyr Gly Leu Thr | Lys Asp Arg |
| | 35 | 40 | 45 |
| Arg Arg Ser Gln | Asp Gly Cys | Pro Asp Gly Cys | Ala Ser Leu Thr |
| | 50 | 55 | 60 |
| Ala Thr Ala Pro | Ser Pro Glu | Val Ser Ala Ala | Thr Ile Ser |
| | 65 | 70 | 75 |
| Leu Met Thr Asp | Glu Pro Gly | Leu Asp Asn Pro | Ala Tyr Val Ser |
| | 80 | 85 | 90 |
| Ser Ala Glu Asp | Gly Gln Pro | Ala Ile Ser Pro | Val Asp Ser Gly |
| | 95 | 100 | 105 |
| Arg Ser Asn Arg | Thr Arg Ala | Arg Pro Phe Glu | Arg Ser Thr Ile |
| | 110 | 115 | 120 |
| Arg Ser Arg Ser | Phe Lys Lys | Ile Asn Arg Ala | Leu Ser Val Leu |
| | 125 | 130 | 135 |
| Arg Arg Thr Lys | Ser Gly Ser | Ala Val Ala Asn | His Ala Asp Gln |
| | 140 | 145 | 150 |
| Gly Arg Glu Asn | Ser Glu Asn | Thr Thr Ala Pro | Glu Val Phe Pro |
| | 155 | 160 | 165 |
| Arg Leu Tyr His | Leu Ile Pro | Asp Gly Glu Ile | Thr Ser Ile Lys |
| | 170 | 175 | 180 |
| Ile Asn Arg Val | Asp Pro Ser | Glu Ser Leu Ser | Ile Arg Leu Val |
| | 185 | 190 | 195 |
| Gly Gly Ser Glu | Thr Pro Leu | Val His Ile Ile | Gln His Ile |
| | 200 | 205 | 210 |
| Tyr Arg Asp Gly | Val Ile Ala | Arg Asp Gly Arg | Leu Leu Pro Gly |
| | 215 | 220 | 225 |
| Asp Ile Ile Leu | Lys Val Asn | Gly Met Asp Ile | Ser Asn Val Pro |
| | 230 | 235 | 240 |
| His Asn Tyr Ala | Val Arg Leu | Leu Arg Gln Pro | Cys Gln Val Leu |
| | 245 | 250 | 255 |
| Trp Leu Thr Val | Met Arg Glu | Gln Lys Phe Arg | Ser Arg Asn Asn |
| | 260 | 265 | 270 |
| Gly Gln Ala Pro | Asp Ala Tyr | Arg Pro Arg Asp | Asp Ser Phe His |
| | 275 | 280 | 285 |
| Val Ile Leu Asn | Lys Ser Ser | Pro Glu Glu Gln | Leu Gly Ile Lys |
| | 290 | 295 | 300 |
| Leu Val Arg Lys | Val Asp Glu | Pro Gly Val Phe | Ile Phe Asn Val |
| | 305 | 310 | 315 |
| Leu Asp Gly Gly | Val Ala Tyr | Arg His Gly Gln | Leu Glu Glu Asn |

<210> 220
 <211> 773
 <212> DNA
 <213> Homo sapiens

<400> 220
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 ccaggcaaat ggtgctgacc atctttggga tacaatctca tggatacgag 150
 gtttttaaca tcatcagccc aagcaacaat ggtggcaatg ttcaggagac 200
 agtgacaatt gataatgaaa aaaataccgc catcgttaac atccatgcag 250
 gatcatgctc ttctaccaca atttttgact ataacatgg ctacattgca 300
 tccagggtgc tctccgaag agcctgcttt atcctgaaga tggaccatca 350
 gaacatccct cctctgaaca atctccaatg gtacatctat gagaaacagg 400
 ctctgggaca catgttctcc aacaaatata cctgggtcaa gtacaacct 450
 ctggagtctc tgatcaaaga cgtggattgg ttctgcttg ggtcacccat 500
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 ctctgtgttt atcttttcaa agaaatacat ccttggttta cactcaaaag 700
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 aaaatataaa tgctgtattt ata 773

<210> 221
 <211> 184
 <212> PRT
 <213> Homo sapiens

<400> 221
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 Ile Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser
 20 25 30
 Asn Asn Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu
 35 40 45
 Lys Asn Thr Ala Ile Val Asn Ile His Ala Gly Ser Cys Ser Ser
 50 55 60
 Thr Thr Ile Phe Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val
 65 70 75
 Leu Ser Arg Arg Ala Cys Phe Ile Leu Lys Met Asp His Gln Asn
 80 85 90

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Pro | Pro | Leu | Asn | Asn | Leu | Gln | Trp | Tyr | Ile | Tyr | Glu | Lys | Gln | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Leu | Asp | Asn | Met | Phe | Ser | Asn | Lys | Tyr | Thr | Trp | Val | Lys | Tyr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Asn | Pro | Leu | Glu | Ser | Leu | Ile | Lys | Asp | Val | Asp | Trp | Phe | Leu | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Ser | Pro | Ile | Glu | Lys | Leu | Cys | Lys | His | Ile | Pro | Leu | Tyr | Lys | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gly | Glu | Val | Val | Glu | Asn | Thr | His | Asn | Val | Gly | Ala | Gly | Gly | Cys | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ala | Lys | Ala | Gly | Leu | Leu | Gly | Ile | Leu | Gly | Ile | Ser | Ile | Cys | Ala | |
| | | | | 170 | | | | | 175 | | | | | 180 | |

Asp Ile His Val

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 <211> 992
 <212> DNA
 <213> Homo sapiens

<400> 222
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 ccattgccta caaagtcctg gaagttttcc ccaaggccg ctgggtgtgc 200
 ataacctgtc gtgcaccca gccaccacc cccatcacct attccctctg 250
 tggaaccaag aacatcaagg tggccaagaa ggtggtgaag acccagcagc 300
 cggcctcctt caacctcaac gtcacactca agtccagtc agacctgtgc 350
 acctacttct gccggggcgc ctccacctca ggtgccatg tggacagtgc 400
 caggctacag atgcactggg agctgtgtgc caagccagt tctgagctgc 450
 gggccaactt cactctgcag gacagagggg caggccccag ggtgagatg 500
 atctgccagg cgtcctcggg cagcccacct atcaccaaca gctgatcgg 550
 gaaggatggg caggtcacc tgccagcag accatgccac aggcagcctg 600
 ccaacttctc ctctctgcc agccagacat cggactggtt ctgtgtgccg 650
 gctgcaaaa acgccaatgt ccagcacagc gccctcacag tggtgcccc 700
 aggtgtgtac cagaagatg aggactggca gggtcctctg gagagcccc 750
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 tttggggggg tcaggatagg gaatggggag gtcagaggag gcaaagcagc 850
 agccatgtag aatgaaccgt ccagagagcc aagcacggca gaggactgca 900

ggccatcagc gtgcactggt cgtatttga gttcatgcaa aatgagtgtg 950

ttttagctgc tcttgccaca aaaaaaaaaa aaaaaaaaaa aa 992

<210> 223

<211> 265

<212> PRT

<213> Homo sapiens

<400> 223

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Leu | Pro | Gly | Leu | Phe | Cys | Leu | Ala | Val | Leu | Ala | Ala | Ser |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Phe | Ser | Lys | Ala | Arg | Glu | Glu | Glu | Ile | Thr | Pro | Val | Val | Ser |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Ile | Ala | Tyr | Lys | Val | Leu | Glu | Val | Phe | Pro | Lys | Gly | Arg | Trp | Val |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Leu | Ile | Thr | Cys | Cys | Ala | Pro | Gln | Pro | Pro | Pro | Ile | Thr | Tyr | |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Ser | Leu | Cys | Gly | Thr | Lys | Asn | Ile | Lys | Val | Ala | Lys | Lys | Val | Val |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Lys | Thr | His | Glu | Pro | Ala | Ser | Phe | Asn | Leu | Asn | Val | Thr | Leu | Lys |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Ser | Pro | Asp | Leu | Leu | Thr | Tyr | Phe | Cys | Arg | Ala | Ser | Ser | Thr |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Gly | Ala | His | Val | Asp | Ser | Ala | Arg | Leu | Gln | Met | His | Trp | Glu |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Leu | Trp | Ser | Lys | Pro | Val | Ser | Glu | Leu | Ala | Asn | Phe | Thr | Leu | |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Gln | Asp | Arg | Gly | Ala | Gly | Pro | Arg | Val | Glu | Met | Ile | Cys | Gln | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Ser | Ser | Gly | Ser | Pro | Pro | Ile | Thr | Asn | Ser | Leu | Ile | Gly | Lys | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Gly | Gln | Val | His | Leu | Gln | Gln | Arg | Pro | Cys | His | Arg | Gln | Pro | Ala |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Phe | Ser | Phe | Leu | Pro | Ser | Gln | Thr | Ser | Asp | Trp | Phe | Trp | Cys |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Gln | Ala | Ala | Asn | Asn | Ala | Asn | Val | Gln | His | Ser | Ala | Leu | Thr | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Pro | Pro | Gly | Gly | Asp | Gln | Lys | Met | Glu | Asp | Trp | Gln | Gly | Pro |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Glu | Ser | Pro | Ile | Leu | Ala | Leu | Pro | Leu | Tyr | Arg | Ser | Thr | Arg |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Arg | Leu | Ser | Glu | Glu | Glu | Phe | Gly | Gly | Phe | Arg | Ile | Gly | Asn | Gly |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Glu | Val | Arg | Gly | Arg | Lys | Ala | Ala | Ala | Met | | | | | |
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 <211> 1297
 <212> DNA
 <213> Homo sapiens

<400> 224
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 ctctctttgc tatgacatca cgtcatccc taagtccaga cctggaccac 150
 ggtggtgtgc ggttcaaggc caggtggatg aaaagacttt tcttactat 200
 gactgtggca acaagacagt cacacctgtc agtccctgg ggaagaaact 250
 aatgtcaca acggcctgga aagcacagaa ccagttactg agagagggtg 300
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 cccaaggaac cctcaccct gcaggcaagg atgtcttctg agcagaaagc 400
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 <211> 246
 <212> PRT
 <213> Homo sapiens

<400> 225

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His Ser Leu Cys Tyr Asp Ile Thr Val Ile Pro Lys Phe Arg Pro
35 40 45

Gly Pro Arg Trp Cys Ala Val Gln Gly Gln Val Asp Glu Lys Thr
50 55 60

Phe Leu His Tyr Asp Cys Gly Asn Lys Thr Val Thr Pro Val Ser
65 70 75

Pro Leu Gly Lys Lys Leu Asn Val Thr Thr Ala Trp Lys Ala Gln
80 85 90

Asn Pro Val Leu Arg Glu Val Val Asp Ile Leu Thr Glu Gln Leu
95 100 105

Arg Asp Ile Gln Leu Glu Asn Tyr Thr Pro Lys Glu Pro Leu Thr
110 115 120

Leu Gln Ala Arg Met Ser Cys Glu Gln Lys Ala Glu Gly His Ser
125 130 135

Ser Gly Ser Trp Gln Phe Ser Phe Asp Gly Gln Ile Phe Leu Leu
140 145 150

Phe Asp Ser Glu Lys Arg Met Trp Thr Thr Val His Pro Gly Ala
155 160 165

Arg Lys Met Lys Glu Lys Trp Glu Asn Asp Lys Val Val Ala Met
170 175 180

Ser Phe His Tyr Phe Ser Met Gly Asp Cys Ile Gly Trp Leu Glu
185 190 195

Asp Phe Leu Met Gly Met Asp Ser Thr Leu Glu Pro Ser Ala Gly
200 205 210

Ala Pro Leu Ala Met Ser Ser Gly Thr Thr Gln Leu Arg Ala Thr
215 220 225

Ala Thr Thr Leu Ile Leu Cys Cys Leu Leu Ile Ile Leu Pro Cys
230 235 240

Phe Ile Leu Pro Gly Ile
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<210> 226

<211> 735

<212> DNA

<213> Homo sapiens

<400> 226

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 gcagaggatt ccaccttcaa aatcatgaac tctggctgtt gatcaaaaga 250
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 agcagaagac tcaacctggc ctccataaa caggacagat tattcagggtg 350
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 attccaaaaa gaaaaactcaa attgggaggc caaccacag aacagcattt 450
 ctgggccagg ctgtaatcag aattgtcgtc gtacatgctc aacagcattg 500
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 ttacctttcc tctctccatt caagcattca aagtatatatt tcaatgaatt 600
 aaaccttgca gcaagggacc ttagataggc ttattctgac tgtatgcttt 650
 accaatgaga gaaaaaaatg catttctgt atcatccttt tcaataaact 700
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<210> 227
 <211> 115
 <212> PRT
 <213> Homo sapiens

<400> 227
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 35 40 45
 Phe Gly Phe Tyr Ser Lys Ser Gln Tyr Arg Thr Trp Gln Lys Lys
 50 55 60
 Leu Ala Glu Asp Ser Thr Trp Pro Pro Ile Asn Arg Thr Asp Tyr
 65 70 75
 Ser Gly Asp Gly Lys Asn Gly Phe Tyr Ile Asn Gly Gly Tyr Glu
 80 85 90
 Ser His Glu Gln Ile Pro Lys Arg Lys Leu Lys Leu Gly Gly Gln
 95 100 105
 Pro Thr Glu Gln His Phe Trp Ala Arg Leu
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 <211> 2185
 <212> DNA
 <213> Homo sapiens

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<210> 229

<211> 653

<212> PRT

<213> Homo sapiens

<400> 229

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Leu | Leu | Trp | Gln | Val | Thr | Val | His | His | His | Thr | Trp | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ala | Ile | Leu | Leu | Pro | Phe | Val | Tyr | Leu | Thr | Ala | Gln | Val | Trp | Ile |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Leu | Cys | Ala | Ala | Ile | Ala | Ala | Ala | Ala | Ser | Ala | Gly | Pro | Gln | Asn |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Cys | Pro | Ser | Val | Cys | Ser | Cys | Ser | Asn | Gln | Phe | Ser | Lys | Val | Val |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Cys | Thr | Arg | Arg | Gly | Leu | Ser | Glu | Val | Pro | Gln | Gly | Ile | Pro | Ser |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Thr | Arg | Tyr | Leu | Asn | Leu | Met | Glu | Asn | Asn | Ile | Gln | Met | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gln | Ala | Asp | Thr | Phe | Arg | His | Leu | His | His | Leu | Glu | Val | Leu | Gln |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Gly | Arg | Asn | Ser | Ile | Arg | Gln | Ile | Glu | Val | Gly | Ala | Phe | Asn |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Gly | Leu | Ala | Ser | Leu | Asn | Thr | Leu | Glu | Leu | Phe | Asp | Asn | Trp | Leu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Val | Ile | Pro | Ser | Gly | Ala | Phe | Glu | Tyr | Leu | Ser | Lys | Leu | Arg |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Glu | Leu | Trp | Leu | Arg | Asn | Asn | Pro | Ile | Glu | Ser | Ile | Pro | Ser | Tyr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Phe | Asn | Arg | Val | Pro | Ser | Leu | Met | Arg | Leu | Asp | Leu | Gly | Glu |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Lys | Lys | Leu | Glu | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly | Leu |

| 185 | | | | | 190 | | | | | 195 | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Phe | Asn | Leu | Lys | Tyr | Leu | Asn | Leu | Gly | Met | Cys | Asn | Ile | Lys | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Met | Pro | Asn | Leu | Thr | Pro | Leu | Val | Gly | Leu | Glu | Glu | Leu | Glu | Met |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Ser | Gly | Asn | His | Phe | Pro | Glu | Ile | Arg | Pro | Gly | Ser | Phe | His | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Leu | Ser | Ser | Leu | Lys | Lys | Leu | Trp | Val | Met | Asn | Ser | Gln | Val | Ser |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Ile | Glu | Arg | Asn | Ala | Phe | Asp | Gly | Leu | Ala | Ser | Leu | Val | Glu |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Asn | Leu | Ala | His | Asn | Asn | Leu | Ser | Ser | Leu | Pro | His | Asp | Leu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Phe | Thr | Pro | Leu | Arg | Tyr | Leu | Val | Glu | Leu | His | Leu | His | His | Asn |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Pro | Trp | Asn | Cys | Asp | Cys | Asp | Ile | Leu | Trp | Leu | Ala | Trp | Trp | Leu |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Glu | Tyr | Ile | Pro | Thr | Asn | Ser | Thr | Cys | Cys | Gly | Arg | Cys | His |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Ala | Pro | Met | His | Met | Arg | Gly | Arg | Tyr | Leu | Val | Glu | Val | Asp | Gln |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Ala | Ser | Phe | Gln | Cys | Ser | Ala | Pro | Phe | Ile | Met | Asp | Ala | Pro | Arg |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Asp | Leu | Asn | Ile | Ser | Glu | Gly | Arg | Met | Ala | Glu | Leu | Lys | Cys | Arg |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Thr | Pro | Pro | Met | Ser | Ser | Val | Lys | Trp | Leu | Leu | Pro | Asn | Gly | Thr |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Val | Leu | Ser | His | Ala | Ser | Arg | His | Pro | Arg | Ile | Ser | Val | Leu | Asn |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Asp | Gly | Thr | Leu | Asn | Phe | Ser | His | Val | Leu | Leu | Ser | Asp | Thr | Gly |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Val | Tyr | Thr | Cys | Met | Val | Thr | Asn | Val | Ala | Gly | Asn | Ser | Asn | Ala |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Ser | Ala | Tyr | Leu | Asn | Val | Ser | Thr | Ala | Glu | Leu | Asn | Thr | Ser | Asn |
| | | | | 440 | | | | | 445 | | | | | 450 |
| Tyr | Ser | Phe | Phe | Thr | Thr | Val | Thr | Val | Glu | Thr | Thr | Glu | Ile | Ser |
| | | | | 455 | | | | | 460 | | | | | 465 |
| Pro | Glu | Asp | Thr | Thr | Arg | Lys | Tyr | Lys | Pro | Val | Pro | Thr | Thr | Ser |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Gly | Tyr | Gln | Pro | Ala | Tyr | Thr | Thr | Ser | Thr | Thr | Val | Leu | Ile |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Gln | Thr | Thr | Arg | Val | Pro | Lys | Gln | Val | Ala | Val | Pro | Ala | Thr | Asp |

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<211> 720
<212> PRT
<213> Homo sapiens

<400> 231
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35 40 45
Cys Glu Tyr Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu
50 55 60
Val Val Gly Tyr Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu
65 70 75
Cys Asp Ser Cys Leu Ile His Pro Gly Cys Thr Ile Phe Glu Asn
80 85 90
Cys Lys Ser Cys Arg Asn Gly Ser Trp Gly Gly Thr Leu Asp Asp
95 100 105
Phe Tyr Val Lys Gly Phe Tyr Cys Ala Glu Cys Arg Ala Gly Trp
110 115 120
Tyr Gly Gly Asp Cys Met Arg Cys Gly Gln Val Leu Arg Ala Pro
125 130 135
Lys Gly Gln Ile Leu Leu Glu Ser Tyr Pro Leu Asn Ala His Cys
140 145 150
Glu Trp Thr Ile His Ala Lys Pro Gly Phe Val Ile Gln Leu Arg
155 160 165

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|-----|-----|-----|-----|---------|
| Phe | Val | Met | Leu | Ser 170 | Leu | Glu | Phe | Asp | Tyr 175 | Met | Cys | Gln | Tyr | Asp 180 |
| Tyr | Val | Glu | Val | Arg 185 | Asp | Gly | Asp | Asn | Arg 190 | Asp | Gly | Gln | Ile | Ile 195 |
| Lys | Arg | Val | Cys | Gly 200 | Asn | Glu | Arg | Pro | Ala 205 | Pro | Ile | Gln | Ser | Ile 210 |
| Gly | Ser | Ser | Leu | His 215 | Val | Leu | Phe | His | Ser 220 | Asp | Gly | Ser | Lys | Asn 225 |
| Phe | Asp | Gly | Phe | His 230 | Ala | Ile | Tyr | Glu | Glu 235 | Ile | Thr | Ala | Cys | Ser 240 |
| Ser | Ser | Pro | Cys | Phe 245 | His | Asp | Gly | Thr | Cys 250 | Val | Leu | Asp | Lys | Ala 255 |
| Gly | Ser | Tyr | Lys | Cys 260 | Ala | Cys | Leu | Ala | Gly 265 | Tyr | Thr | Gly | Gln | Arg 270 |
| Cys | Glu | Asn | Leu | Leu 275 | Glu | Glu | Arg | Asn | Cys 280 | Ser | Asp | Pro | Gly | Gly 285 |
| Pro | Val | Asn | Gly | Tyr 290 | Gln | Lys | Ile | Thr | Gly 295 | Gly | Pro | Gly | Leu | Ile 300 |
| Asn | Gly | Arg | His | Ala 305 | Lys | Ile | Gly | Thr | Val 310 | Val | Ser | Phe | Phe | Cys 315 |
| Asn | Asn | Ser | Tyr | Val 320 | Leu | Ser | Gly | Asn | Glu 325 | Lys | Arg | Thr | Cys | Gln 330 |
| Gln | Asn | Gly | Glu | Trp 335 | Ser | Gly | Lys | Gln | Pro 340 | Ile | Cys | Ile | Lys | Ala 345 |
| Cys | Arg | Glu | Pro | Lys 350 | Ile | Ser | Asp | Leu | Val 355 | Arg | Arg | Arg | Val | Leu 360 |
| Pro | Met | Gln | Val | Gln 365 | Ser | Arg | Glu | Thr | Pro 370 | Leu | His | Gln | Leu | Tyr 375 |
| Ser | Ala | Ala | Phe | Ser 380 | Lys | Gln | Lys | Leu | Gln 385 | Ser | Ala | Pro | Thr | Lys 390 |
| Lys | Pro | Ala | Leu | Pro 395 | Phe | Gly | Asp | Leu | Pro 400 | Met | Gly | Tyr | Gln | His 405 |
| Leu | His | Thr | Gln | Leu 410 | Gln | Tyr | Glu | Cys | Ile 415 | Ser | Pro | Phe | Tyr | Arg 420 |
| Arg | Leu | Gly | Ser | Ser 425 | Arg | Arg | Thr | Cys | Leu 430 | Arg | Thr | Gly | Lys | Trp 435 |
| Ser | Gly | Arg | Ala | Pro 440 | Ser | Cys | Ile | Pro | Ile 445 | Cys | Gly | Lys | Ile | Glu 450 |
| Asn | Ile | Thr | Ala | Pro 455 | Lys | Thr | Gln | Gly | Leu 460 | Arg | Trp | Pro | Trp | Gln 465 |
| Ala | Ala | Ile | Tyr | Arg 470 | Arg | Thr | Ser | Gly | Val 475 | His | Asp | Gly | Ser | Leu 480 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Lys | Gly | Ala | Trp | Phe | Leu | Val | Cys | Ser | Gly | Ala | Leu | Val | Asn |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Glu | Arg | Thr | Val | Val | Val | Ala | Ala | His | Cys | Val | Thr | Asp | Leu | Gly |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Lys | Val | Thr | Met | Ile | Lys | Thr | Ala | Asp | Leu | Lys | Val | Val | Leu | Gly |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Lys | Phe | Tyr | Arg | Asp | Asp | Asp | Arg | Asp | Glu | Lys | Thr | Ile | Gln | Ser |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Leu | Gln | Ile | Ser | Ala | Ile | Ile | Leu | His | Pro | Asn | Tyr | Asp | Pro | Ile |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Leu | Leu | Asp | Ala | Asp | Ile | Ala | Ile | Leu | Lys | Leu | Leu | Asp | Lys | Ala |
| | | | | 560 | | | | | 565 | | | | | 570 |
| Arg | Ile | Ser | Thr | Arg | Val | Gln | Pro | Ile | Cys | Leu | Ala | Ala | Ser | Arg |
| | | | | 575 | | | | | 580 | | | | | 585 |
| Asp | Leu | Ser | Thr | Ser | Phe | Gln | Glu | Ser | His | Ile | Thr | Val | Ala | Gly |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Trp | Asn | Val | Leu | Ala | Asp | Val | Arg | Ser | Pro | Gly | Phe | Lys | Asn | Asp |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Thr | Leu | Arg | Ser | Gly | Val | Val | Ser | Val | Val | Asp | Ser | Leu | Leu | Cys |
| | | | | 620 | | | | | 625 | | | | | 630 |
| Glu | Glu | Gln | His | Glu | Asp | His | Gly | Ile | Pro | Val | Ser | Val | Thr | Asp |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Asn | Met | Phe | Cys | Ala | Ser | Trp | Glu | Pro | Thr | Ala | Pro | Ser | Asp | Ile |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Cys | Thr | Ala | Glu | Thr | Gly | Gly | Ile | Ala | Ala | Val | Ser | Phe | Pro | Gly |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Arg | Ala | Ser | Pro | Glu | Pro | Arg | Trp | His | Leu | Met | Gly | Leu | Val | Ser |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Trp | Ser | Tyr | Asp | Lys | Thr | Cys | Ser | His | Arg | Leu | Ser | Thr | Ala | Phe |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Thr | Lys | Val | Leu | Pro | Phe | Lys | Asp | Trp | Ile | Glu | Arg | Asn | Met | Lys |
| | | | | 710 | | | | | 715 | | | | | 720 |

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<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

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<210> 233

<211> 24

<212> DNA

<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 233
tgccaaggac gcaactgccgt catg 24

<210> 234
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

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tggccagatc atcaagcgtg tctgtggcaa cgagcggcca gctcctatcc 50

<210> 235
<211> 1964
<212> DNA
<213> Homo sapiens

<400> 235
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attcacgtaa taaaaaacat gggcttcaac ctgactttcc acctttccta 150
caaattccga ttactgttgc tgttgacttt gtgcctgaca gtgggtgggt 200
gggccaccag taactacttc gtgggtgccca ttcaagagat tcctaagca 250
aaggagttca tggctaattt ccataagacc ctcatctttg ggaagggaaa 300
aactctgact aatgaagcat ccacgaagaa ggtagaactt gacaactgtc 350
cttctgtgtc tcttacctc agaggcoaga gcaagctcat ttcaaaacca 400
gatctcactt tggaagaggt acaggcagaa aatcccaaag tgtccagagg 450
ccggtatcgc cctcaggaat gtaaagcttt acagagggtc gccatcctcg 500
ttccccaccg gaacagagag aaacacctga tgtacctgtc ggaacatctg 550
catcccttcc tgcagaggca gcagctggat tatggcatct acgtcatcca 600
ccaggctgaa ggtaaaaagt ttaatcgagc caaactcttg aatgtgggct 650
atctagaagc cctcaaggaa gaaaattggg actgctttat attccacgat 700
gtggacctgg taccgcagaa tgactttaac ctttacaagt gtgaggagca 750
tcccagcat ctgggtggtg gcagggaacag cactgggtac aggttacgtt 800
acagtggata ttttgggggt gttactgccc taagcagaga gcagtttttc 850
aagggtaatg gattctctaa caactactgg ggaatggggag gcgaagacga 900
tgacctcaga ctcaggggtg agctccaaag aatgaaaatt tcccgggccc 950
tgctgaagt gggtaaatat acaatggtct tccacactag agacaaagcg 1000

aatgaggtga acgcagaacg gatgaagctc ttacaccaag tgtcacgagt 1050
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 gtacaatcat ctgtgaagtg gtggtgtcag gtgagaaggc gtccacaaaa 1650
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 cagtgatgcc caccagagaa tacattctct attagttttt aaagagtttt 1850
 tgtaaaatga tttgtacaa gtaggatatg aattagcagt ttacaagttt 1900
 acatattaac taataataaa tatgtctatc aaataacctc gtagtaaaat 1950
 gtgaaaaagc aaaa 1964

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 <211> 344
 <212> PRT
 <213> Homo sapiens

<220>
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 <222> 1-27
 <223> Signal peptide

<220>
 <221> N-glycosylation sites
 <222> 4-7, 220-223, 335-338
 <223> N-glycosylation sites

<220>
 <221> Xylose isomerase proteins
 <222> 191-201
 <223> Xylose isomerase proteins

<400> 236
 Met Gly Phe Asn Leu Thr Phe His Leu Ser Tyr Lys Phe Arg Leu
 1 5 10 15

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Leu | Leu | Leu | Leu | Thr | Leu | Cys | Leu | Thr | Val | Val | Gly | Trp | Ala | Thr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Ser | Asn | Tyr | Phe | Val | Gly | Ala | Ile | Gln | Glu | Ile | Pro | Lys | Ala | Lys | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Glu | Phe | Met | Ala | Asn | Phe | His | Lys | Thr | Leu | Ile | Leu | Gly | Lys | Gly | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Lys | Thr | Leu | Thr | Asn | Glu | Ala | Ser | Thr | Lys | Lys | Val | Glu | Leu | Asp | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Asn | Cys | Pro | Ser | Val | Ser | Pro | Tyr | Leu | Arg | Gly | Gln | Ser | Lys | Leu | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Ile | Phe | Lys | Pro | Asp | Leu | Thr | Leu | Glu | Glu | Val | Gln | Ala | Glu | Asn | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Pro | Lys | Val | Ser | Arg | Gly | Arg | Tyr | Arg | Pro | Gln | Glu | Cys | Lys | Ala | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Gln | Arg | Val | Ala | Ile | Leu | Val | Pro | His | Arg | Asn | Arg | Glu | Lys | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| His | Leu | Met | Tyr | Leu | Leu | Glu | His | Leu | His | Pro | Phe | Leu | Gln | Arg | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Gln | Gln | Leu | Asp | Tyr | Gly | Ile | Tyr | Val | Ile | His | Gln | Ala | Glu | Gly | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Lys | Lys | Phe | Asn | Arg | Ala | Lys | Leu | Leu | Asn | Val | Gly | Tyr | Leu | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Ala | Leu | Lys | Glu | Glu | Asn | Trp | Asp | Cys | Phe | Ile | Phe | His | Asp | Val | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Asp | Leu | Val | Pro | Glu | Asn | Asp | Phe | Asn | Leu | Tyr | Lys | Cys | Glu | Glu | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| His | Pro | Lys | His | Leu | Val | Val | Gly | Arg | Asn | Ser | Thr | Gly | Tyr | Arg | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Arg | Tyr | Ser | Gly | Tyr | Phe | Gly | Gly | Val | Thr | Ala | Leu | Ser | Arg | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Glu | Gln | Phe | Phe | Lys | Val | Asn | Gly | Phe | Ser | Asn | Asn | Tyr | Trp | Gly | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Trp | Gly | Gly | Glu | Asp | Asp | Asp | Leu | Arg | Leu | Arg | Val | Glu | Leu | Gln | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Arg | Met | Lys | Ile | Ser | Arg | Pro | Leu | Pro | Glu | Val | Gly | Lys | Tyr | Thr | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Met | Val | Phe | His | Thr | Arg | Asp | Lys | Gly | Asn | Glu | Val | Asn | Ala | Glu | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Arg | Met | Lys | Leu | Leu | His | Gln | Val | Ser | Arg | Val | Trp | Arg | Thr | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Gly | Leu | Ser | Ser | Cys | Ser | Tyr | Lys | Leu | Val | Ser | Val | Glu | His | Asn | |
| | | | | 320 | | | | | 325 | | | | | 330 | |

Pro Leu Tyr Ile Asn Ile Thr Val Asp Phe Trp Phe Gly Ala
335 340

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<213> Artificial Sequence

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<223> Synthetic oligonucleotide probe

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<210> 238
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 238
gagcttcacg cgttctgcgt tcacc 25

<210> 239
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 239
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<210> 240
<211> 2567
<212> DNA
<213> Homo sapiens

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tctcccgcgc cgggccccgc aatggcccag gcagtggtgt cgcgcctcgg 150
ccgcacatcct tggtttgcct gctcctgcc ctgggccccg gcagggtgtg 200
ccgcaggcct gtatgaactc aatctcacca ccgatagccc tgccaccacg 250
ggagcgggtg tgaccatctc gccagcctg gtggccaagg acaacggcag 300
cctggccctg ccgctgacg cccacctcta ccgcttcacc tggatccaca 350
ccccctggtg gttactggc aagatggaga aggttctcag ctccaccatc 400
cgtgtggtgc gccacgtgcc cggggaattc ccggtctctg tctgggtcac 450
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tcccatcacg agagttctc gtgggggacc ttgtgtgac ccagaacact 550

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 accacaagat ccagggtgtg ccctccagaa tccagccggc tgtctttgct 1150
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cctggatggg gggcaggact aatactgagt gattgcagag tgctttataa 2200
 atatcacctt attttatcga aacccatctg tgaactttc actgaggaaa 2250
 aggccttgca gcggtagaag aggttgagtc aaggccgggc gcggtggctc 2300
 acgcctgtaa tcccagcaact ttgggaggcc gaggcgggtg gatcacgaga 2350
 tcaggagatc gagaccacc tggttaaacac ggtgaaaccc cgtctctact 2400
 aaaaaaatac aaaaagttag cggggcgtgg tgggtgggtgc ctgtagtccc 2450
 agctactcgg gaggtgagg caggagaatg gtgcgaaccc gggaggcgga 2500
 gcttgcatg agcccagatg gcgcactgc actccagcct gagtgacaga 2550
 gcgagactct gtctcca 2567

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<211> 423

<212> PRT

<213> Homo sapiens

<400> 241

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gln | Ala | Val | Trp | Ser | Arg | Leu | Gly | Arg | Ile | Leu | Trp | Leu | 1 | 5 | 10 | 15 |
| Ala | Cys | Leu | Leu | Pro | Trp | Ala | Pro | Ala | Gly | Val | Ala | Ala | Gly | Leu | 20 | 25 | 30 | 35 |
| Tyr | Glu | Leu | Asn | Leu | Thr | Thr | Asp | Ser | Pro | Ala | Thr | Thr | Gly | Ala | 40 | 45 | 50 | 55 |
| Val | Val | Thr | Ile | Ser | Ala | Ser | Leu | Val | Ala | Lys | Asp | Asn | Gly | Ser | 60 | 65 | 70 | 75 |
| Leu | Ala | Leu | Pro | Ala | Asp | Ala | His | Leu | Tyr | Arg | Phe | His | Trp | Ile | 80 | 85 | 90 | 95 |
| Ser | Thr | Ile | Arg | Val | Val | Gly | His | Val | Pro | Gly | Glu | Phe | Pro | Val | 100 | 105 | 110 | 115 |
| Ser | Val | Trp | Val | Thr | Ala | Ala | Asp | Cys | Trp | Met | Cys | Gln | Pro | Val | 120 | 125 | 130 | 135 |
| Ala | Arg | Gly | Phe | Val | Val | Leu | Pro | Ile | Thr | Glu | Phe | Leu | Val | Gly | 140 | 145 | 150 | 155 |
| Asp | Leu | Val | Val | Thr | Gln | Asn | Thr | Ser | Leu | Pro | Trp | Pro | Ser | Ser | 160 | 165 | 170 | 175 |
| Tyr | Leu | Thr | Lys | Thr | Val | Leu | Lys | Val | Ser | Phe | Leu | Leu | His | Asp | 180 | 185 | 190 | 195 |
| Pro | Ser | Asn | Phe | Leu | Lys | Thr | Ala | Leu | Phe | Leu | Tyr | Ser | Trp | Asp | 200 | 205 | 210 | 215 |
| Phe | Gly | Asp | Gly | Thr | Gln | Met | Val | Thr | Glu | Asp | Ser | Val | Val | Tyr | 220 | 225 | 230 | 235 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Asn | Tyr | Ser | Ile | Ile | Gly | Thr | Phe | Thr | Val | Lys | Leu | Lys | Val |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Val | Ala | Glu | Trp | Glu | Glu | Val | Glu | Pro | Asp | Ala | Thr | Arg | Ala | Val |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Gln | Lys | Thr | Gly | Asp | Phe | Ser | Ala | Ser | Leu | Lys | Leu | Gln | Glu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Thr | Leu | Arg | Gly | Ile | Gln | Val | Leu | Gly | Pro | Thr | Leu | Ile | Gln | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Phe | Gln | Lys | Met | Thr | Val | Thr | Leu | Asn | Phe | Leu | Gly | Ser | Pro | Pro |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Leu | Thr | Val | Cys | Trp | Arg | Leu | Lys | Pro | Glu | Cys | Leu | Pro | Leu | Glu |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Glu | Gly | Glu | Cys | His | Pro | Val | Ser | Val | Ala | Ser | Thr | Ala | Tyr | Asn |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Leu | Thr | His | Thr | Phe | Arg | Asp | Pro | Gly | Asp | Tyr | Cys | Phe | Ser | Ile |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Arg | Ala | Glu | Asn | Ile | Ile | Ser | Lys | Thr | His | Gln | Tyr | His | Lys | Ile |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Gln | Val | Trp | Pro | Ser | Arg | Ile | Gln | Pro | Ala | Val | Phe | Ala | Phe | Pro |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Cys | Ala | Thr | Leu | Ile | Thr | Val | Met | Leu | Ala | Phe | Ile | Met | Tyr | Met |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Thr | Leu | Arg | Asn | Ala | Thr | Gln | Gln | Lys | Asp | Met | Val | Glu | Asn | Pro |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Glu | Pro | Pro | Ser | Gly | Val | Arg | Cys | Cys | Cys | Gln | Met | Cys | Cys | Gly |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Pro | Phe | Leu | Leu | Glu | Thr | Pro | Ser | Glu | Tyr | Leu | Glu | Ile | Val | Arg |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Glu | Asn | His | Gly | Leu | Leu | Pro | Pro | Leu | Tyr | Lys | Ser | Val | Lys | Thr |
| | | | | 410 | | | | | 415 | | | | | 420 |

Tyr Thr Val

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 <211> 26
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 242
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<210> 243
 <211> 25
 <212> DNA
 <213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 243
gaaaggccca cagcacatct ggag 25

<210> 244
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 244
ccacgaccg agcaacttc tcaagaccga ctgtttctc tacagc 46

<210> 245
<211> 485
<212> DNA
<213> Homo sapiens

<400> 245
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ctgaccagtg gctctgtttt ccacacaacag acgggacaac ttgcagagct 150
gcaaccccag gacagagctg gagccaggcg cagctggatg cccatgttcc 200
agaggcgaag gaggcgagac acccacttcc ccattctcat ttctgtctgc 250
ggctgtctgc atcgatcaaa gtgtgggatg tgctgaaga cgtagaacct 300
acctgccctg cccccgtccc ctcccttcct tatttattcc tgetgoccca 350
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 450
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<210> 246
<211> 84
<212> PRT
<213> Homo sapiens

<400> 246
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20 25 30
Thr Gly Gln Leu Ala Glu Leu Gln Pro Gln Asp Arg Ala Gly Ala
35 40 45
Arg Ala Ser Trp Met Pro Met Phe Gln Arg Arg Arg Arg Asp
50 55 60
Thr His Phe Pro Ile Cys Ile Phe Cys Cys Gly Cys Cys His Arg
65 70 75

Ser Lys Cys Gly Met Cys Cys Lys Thr
80

<210> 247
<211> 2359
<212> DNA
<213> Homo sapiens

<400> 247
ctgtcaggaa ggaccatctg aaggctgcaa ttgtttcta gggaggcagg 50
tgctggcctg gcctggatct tccaccatgt tcctgttgct gccttttgat 100
agcctgattg tcaaccttct ggcatctccc ctgaactgcc tcttcacct 150
ccttctcggt ttcacatag tgccagccat ttttgagtc tctttggta 200
tccgcaaact ctacatgaaa agtctgttaa aaatctttgc gtgggctacc 250
ttgagaatgg agcggaggag caaggagaag aaccaccagc ttacaagcc 300
ctacaccaac ggaatcattg caaaggatcc cacttacta gaagaagaga 350
tcaaagagat tcgtogaagt ggtagtagta aggctctgga caactctcca 400
gagttcgagc tctctgacat tttctacttt tgcgggaaa gaattggagac 450
cattatggat gatgagggtg caaagagatt ctgagcaga gaactggagt 500
cctggaacct gctgagcaga accaattata acttccagta catcagcctt 550
cggctcacgg tcctgtgggg gttaggagtg ctgattcgtt actgctttct 600
gctgcgcctc aggatagcac tggctttcac agggattagc cttctggtgg 650
tgggcacaac tgtggtggga tacttgccaa atgggaggtt taaggaaattc 700
atgagtaaac atgttcaact aatgtgttac cggatctgcg tgcgagcgct 750
gacagccatc atcacctacc atgacaggga aaacagacca agaaatggtg 800
gcatctgtgt ggccaatcat acctaccga tcgatgtgat catcttgacc 850
agcagatggc attatgccat ggtgggtcaa gtgcacgggg gactcatggg 900
tgtgattcag agagccatgg tgaaggcctg cccacacgtc tggtttgagc 950
gctcggaagt gaaggatgc cacctggtgg ctaagagact gactgaacat 1000
gtgcaagata aaagcaagct gcctatcttc atcttccagc aaggaacctg 1050
catcaataat acatcggtga tgatgttcaa aaagggaagt ttgaaattg 1100
gagccacagt ttaccctggt gctatcaagt atgaccotca atttgccgat 1150
gccttctgga acagcagcaa atacgggatg gtgacgtacc tgctgcgaat 1200
gatgaccagc tgggcatatt tctgcagcgt gtggtaacct cctcccatga 1250
ctagagaggg agatgaagat gctgtccagt ttgcgaatag ggtgaaattc 1300
gccattgcca ggacgggagg acttgtggac ctgctgtggg atgggggcct 1350

gaagagggag aaggtgaagg acacgttcaa ggaggagcag cagaagctgt 1400
 acagcaaat gatcgtgggg aaccacaagg acaggagccg ctcttgagcc 1450
 tgcctccagc tggctggggc caccgtgcgg ggtccaacg ggctcagagc 1500
 tggagttgcc gccgccgcc cactctgtgt gtctttcca gactccaggg 1550
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 agtcgttgga ggaatgccat taaagtgaac tccccacct tgacgctgt 1750
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 cggccaccgc ctctccagga aaggcacagc tgaggcactg tggctggctt 1900
 cggcctcaac atcgccccca gccttgagc tctgcagaca tgataggag 1950
 gaaactgtca tctgcagggg ctttcagcaa aatgaagggt tagattttta 2000
 tgctgctgct gatgggggta cttaaggagg ggaagaggc cagggtggcc 2050
 gctgactggg ccatggggag aacgtgtgtt cgtactccag gctaaccctg 2100
 aactcccat gtgatgcgc cttgtgtgaa tgtgtgtctc gggttcccca 2150
 tctgtaatat gagtcggggg gaatggtggt gattcctacc tcacagggct 2200
 gttgtgggga ttaaagtgt gcgggtgagt gaaggacaca tcacgttcag 2250
 tgtttaagt acagggccac aaaacggggc acggcaggcc tgagctcaga 2300
 gctgctgcac tggccttgg attgttctt gtgagtaaat aaaactggct 2350
 ggtgaatga 2359

<210> 248
 <211> 456
 <212> PRT
 <213> Homo sapiens

<400> 248
 Met Phe Leu Leu Pro Phe Asp Ser Leu Ile Val Asn Leu Leu
 1 5 10 15
 Gly Ile Ser Leu Thr Val Leu Phe Thr Leu Leu Leu Val Phe Ile
 20 25 30
 Ile Val Pro Ala Ile Phe Gly Val Ser Phe Gly Ile Arg Lys Leu
 35 40 45
 Tyr Met Lys Ser Leu Leu Lys Ile Phe Ala Trp Ala Thr Leu Arg
 50 55 60
 Met Glu Arg Gly Ala Lys Glu Lys Asn His Gln Leu Tyr Lys Pro
 65 70 75

Met Thr Arg Glu Ala Asp Glu Asp Ala Val Gln Phe Ala Asn Arg
 395 400 405

Val Lys Ser Ala Ile Ala Arg Gln Gly Gly Leu Val Asp Leu Leu
 410 415 420

Trp Asp Gly Gly Leu Lys Arg Glu Lys Val Lys Asp Thr Phe Lys
 425 430 435

Glu Glu Gln Gln Lys Leu Tyr Ser Lys Met Ile Val Gly Asn His
 440 445 450

Lys Asp Arg Ser Arg Ser
 455

<210> 249
 <211> 1103
 <212> DNA
 <213> Homo sapiens

<400> 249
 gccctctcgaa accaggactc cagcacctct ggtcccgccc tcaccggac 50
 ccctggccct cactctcct ccagggatgg cgctggcgcc ttgatgatc 100
 gccctcgga gctcggcct ccacacctgg caggcccagg ctgttccac 150
 catctgtccc ctgggcctgg ctccagacac ctttgacgat acctatgtg 200
 gttgtgcaga ggagatggag gagaaggcag cccccctgct aaaggaggaa 250
 atggcccacc atgocctgct gcgggaatcc tgggaggcag ccaggagac 300
 ctgggaggac aagcgtcag ggcttaacct gccccctggc ttaaaagccc 350
 agaatggaat agccattatg gtctacacca actcatogaa cacottgtac 400
 tgggagttga atcaggccgt gcggacgggc ggaggctccc ggagctcta 450
 catgaggcag ttcccttca aggccttgca ttcttaactg atccgggccc 500
 tgcagctgct gcgaggcagt gggggctgca gcaggggacc tggggagggtg 550
 gtgttccag gtgtgggcag ccttcgcttt gaaccaaga ggctggggga 600
 ctctgtccgc ttgggccagt ttgcctccag ctccctgat aaggcagtgg 650
 cccacagatt tggggagaag aggcggggct gtgtgtctgc gccagggggtg 700
 cagctagggt cacaatctga gggggcctcc tctotgcccc cctggaagac 750
 totgtcttg gccctggag agttccagct ctcagggggtt ggccctgaa 800
 agtccaacat tgccactta ggagccctgg gaaogggatg ccttcatatg 850
 acgaaggagg acctccagca gccttgagaa gcaagaacat ggttcggac 900
 ccagccctag cagccttctc cccaaccagg atgttgccct ggggaggcca 950
 cagcagggct gagggaactc tgctatgtga tggggacttc ctgggacaag 1000
 caaggaagt actgaggcag ccacttgatt gaacgggtgt gcaatgtgga 1050

gacatggagt ttatttgagg tagctacgtg attaaatggt attgcagtgt 1100
gga 1103

<210> 250
<211> 240
<212> PRT
<213> Homo sapiens

<400> 250
Met Ala Leu Ala Ala Leu Met Ile Ala Leu Gly Ser Leu Gly Leu
1 5 10
His Thr Trp Gln Ala Gln Ala Val Pro Thr Ile Leu Pro Leu Gly
20 25 30
Leu Ala Pro Asp Thr Phe Asp Asp Thr Tyr Val Gly Cys Ala Glu
35 40 45
Glu Met Glu Glu Lys Ala Ala Pro Leu Leu Lys Glu Glu Met Ala
50 55 60
His His Ala Leu Leu Arg Glu Ser Trp Glu Ala Ala Gln Glu Thr
65 70 75
Trp Glu Asp Lys Arg Arg Gly Leu Thr Leu Pro Pro Gly Phe Lys
80 85 90
Ala Gln Asn Gly Ile Ala Ile Met Val Tyr Thr Asn Ser Ser Asn
95 100 105
Thr Leu Tyr Trp Glu Leu Asn Gln Ala Val Arg Thr Gly Gly Gly
110 115 120
Ser Arg Glu Leu Tyr Met Arg His Phe Pro Phe Lys Ala Leu His
125 130 135
Phe Tyr Leu Ile Arg Ala Leu Gln Leu Leu Arg Gly Ser Gly Gly
140 145 150
Cys Ser Arg Gly Pro Gly Glu Val Val Phe Arg Gly Val Gly Ser
155 160 165
Leu Arg Phe Glu Pro Lys Arg Leu Gly Asp Ser Val Arg Leu Gly
170 175 180
Gln Phe Ala Ser Ser Ser Leu Asp Lys Ala Val Ala His Arg Phe
185 190 195
Gly Glu Lys Arg Arg Gly Cys Val Ser Ala Pro Gly Val Gln Leu
200 205 210
Gly Ser Gln Ser Glu Gly Ala Ser Ser Leu Pro Pro Trp Lys Thr
215 220 225
Leu Leu Leu Ala Pro Gly Glu Phe Gln Leu Ser Gly Val Gly Pro
230 235 240

<210> 251
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 251
ccaccacctg gaggtcctgc agttgggcag gaactccatc cggcagattg 50

<210> 252
<211> 1076
<212> DNA
<213> Homo sapiens

<400> 252
gtggcttcac ttacagtggct gacttcagag gagcaatatg gctggttccc 50
caacatgcct caccctcacc tatatccttt ggcagctcac agggctagca 100
gcctctggag ccgtgaaaga gctggtcggt tccgttggtg gggccgtgac 150
tttccccctg aagtccaaag taaagcaagt tgactctatt gtctggacct 200
tcaacacaac cctcttctg accatacagc cagaaggggg cactatcata 250
gtgacccaaa atcgtaatat ggagagagta gacttccacc atggaggcta 300
ctccctgaag ctacagcaac tgaagaagaa tgactcaggg atctactatg 350
tggggatata cagctcatca ctccagcagc cctccaccca ggagtacgtg 400
ctgcatgtct acgagcacct gtcaaacctt aaagtcacca tgggtctgca 450
gagcaataag aatggcacct gtgtgaccaa tctgacatgc tgcattggaac 500
atgggggaaga ggaatgtgatt tatacctgga aggcctctgg gcaagcagcc 550
aatgagctcc ataattgggtc catcctcccc atctcctgga gatggggaga 600
aagtgatatg accttcatct gcgttgccag gaaccctgtc agcagaaaact 650
tctcaagccc catccttgcc aggaagctct gtgaagggtg tgctgatgac 700
ccagattcct ccattggtcct cctgtgtctc ctgttggtgc cctcctgct 750
cagtctcttt gtactggggc tatttctttg gtttctgaag agagagagac 800
aagaagagta cattgaagag aagaagagag tggacatttg tcgggaaact 850
cctaaccatg gccccattc tggagagaac acagagtacg acacaatccc 900
tcacactaat agaacaatcc taaaggaaga tccagcaaat acggtttact 950
ccactgtgga aataccgaaa aagatggaaa atcccactc actgtctcacg 1000
atgccagaca caccaaggct atttgcttat gagaatgta tctagacagc 1050
agtgcactcc cctaagcttc tgctca 1076

<210> 253
<211> 335
<212> PRT
<213> Homo sapiens

<400> 253
Met Ala Gly Ser Pro Thr Cys Leu Thr Leu Ile Tyr Ile Leu Trp

Tyr Glu Asn Val Ile
335

<210> 254

<211> 1053

<212> DNA

<213> Homo sapiens

<400> 254

ctggttcccc aacatgcctc accctcatct atatcctttg gcagctcaca 50
gggtcagcag cctctggacc cgtgaaagag ctggtcgggt cggttggtgg 100
ggccgtgact ttccccctga agtccaaagt aaagcaagtt gactctattg 150
tctggacctt caacacaacc cctcttgta ccatagacc agaagggggc 200
actatcatag tgaccacaaa tcgtaatagg gagagagtag acttcccaga 250
tggaggctac tccctgaagc tcagcaaaact gaagaagaat gactcaggga 300
tctactatgt ggggatatac agctcatcac tccagcagcc ctccaccag 350
gagtaactgc tgcattgcta cgagcacctg tcaaacgcta aagtcacat 400
gggtctgcag agcaataaga atggcacctg tgtgaccaat ctgacatgct 450
gcatggaaca tgggaagag gatgtgattt atacctgaa ggccctgggg 500
caagcagcca atgagtgcca taatgggtcc atcctcccca tctctggag 550
atggggagaa agtgatatga ccttcatctg cgttgccagg aacctgtca 600
gcagaaactt ctcaagcccc atccttgcca ggaagctctg tgaaggtgct 650
gctgatgacc cagattctc catggtctc ctgtgtctct tgttggtgcc 700
cctcctgctc agtctcttg tactggggct attctcttg tttctgaaga 750
gagagagaca agaagagtag attgaagaga agaagagagt ggacatttgt 800
cgggaaactc ctaacatatg ccccatctt ggagagaaca cagagtacga 850
cacaatccct cactactaata gaacaatcct aaaggaagat ccagcaaata 900
cggtttactc cactgtggaa ataccgaaaa agatggaaaa tccccactca 950
ctgtctacga tgccagacac accaaggcta ttgctctat agaattgtat 1000
ctagacagca gtgcactccc ctaagtctct gctcaaaaaa aaaaaaaaaa 1050
aaa 1053

<210> 255

<211> 860

<212> DNA

<213> Homo sapiens

<400> 255

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gatgctgctg ctgctgtgtt tgggactgac cctagtctgt gtccatgcag 100
aagaagctag ttctacggga aggaacttta atgtagaaaa gattaatggg 150
gaatggcata ctattatcct ggccctctgac aaaagagaaa agatagaaga 200
acatggcaac tttagacttt ttctggagca aatccatgtc ttggagaatt 250
ccttagttct taaagtccat actgtaagag atgaagagtg ctccgaatta 300
tctatggttg ctgacaaaac agaaaaggct ggtgaatatt ctgtgacgta 350
tgatggattc aatacattta ctatacctaa gacagactat gataactttc 400
ttatggctca cctcattaac gaaaaggatg gggaaacctt ccagctgatg 450
gggctctatg gccgagaacc agatttgagt tcagacatca aggaaagggt 500
tgcacaaacta tgtgaggagc atggaatcct tagagaaaat atcattgacc 550
tatccaatgc caatcgctgc ctccaggccc gagaatgaag aatggcctga 600
gcctccagtg ttgagtggac acttctcacc aggactccac catcatccct 650
tcctatccat acagcatccc cagtataaat tctgtgatct gcattccatc 700
ctgtctcact gagaagtcca attccagtct atcaacatgt tacctaggat 750
acctcatcaa gaatcaaaga cttcttttaa tttctctttg ataccacctt 800
gacaattttt catgaaatta ttctctctcc tgttcaataa atgattaccc 850
ttgcacttaa 860

<210> 256
<211> 180
<212> PRT
<213> Homo sapiens

<400> 256
Met Lys Met Leu Leu Leu Cys Leu Gly Leu Thr Leu Val Cys
1 5 10 15
Val His Ala Glu Glu Ala Ser Ser Thr Gly Arg Asn Phe Asn Val
20 25 30
Glu Lys Ile Asn Gly Glu Trp His Thr Ile Ile Leu Ala Ser Asp
35 40 45
Lys Arg Glu Lys Ile Glu Glu His Gly Asn Phe Arg Leu Phe Leu
50 55 60
Glu Gln Ile His Val Leu Glu Asn Ser Leu Val Leu Lys Val His
65 70 75
Thr Val Arg Asp Glu Glu Cys Ser Glu Leu Ser Met Val Ala Asp
80 85 90
Lys Thr Glu Lys Ala Gly Glu Tyr Ser Val Thr Tyr Asp Gly Phe
95 100 105
Asn Thr Phe Thr Ile Pro Lys Thr Asp Tyr Asp Asn Phe Leu Met
110 115 120

Ala His Leu Ile Asn Glu Lys Asp Gly Glu Thr Phe Gln Leu Met
 125 130
 Gly Leu Tyr Gly Arg Glu Pro Asp Leu Ser Ser Asp Ile Lys Glu
 140 145 150
 Arg Phe Ala Gln Leu Cys Glu Glu His Gly Ile Leu Arg Glu Asn
 155 160 165
 Ile Ile Asp Leu Ser Asn Ala Asn Arg Cys Leu Gln Ala Arg Glu
 170 175 180

<210> 257
 <211> 766
 <212> DNA
 <213> Homo sapiens

<400> 257
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 ttctcaatgc gatacctcta attgtcagct tagttgagga agaccaattt 150
 tctcaaaacc ccattctctg ctttgagtgg tggttccagc gaattatagg 200
 agcagggtctg atggccattc cagcaacaac aatgtccttg acagcaagaa 250
 aaagagcggtg ctgcaacaac agaactggaa tgtttctttc atcatttttc 300
 agtgtgatca cagtcattgg tgctctgtat tgcattgcta tatccatcca 350
 ggctctctta aaaggtcctc tcatgtgtaa ttctcaagc aacagtaatg 400
 ccaattgtga attttcattg aaaaacatca gtgacattca tccagaatcc 450
 ttcaacttgc agtgggtttt caatgactct tgtgcacctc ctactgggtt 500
 caataaaacc accagtaacg acaccatggc gagggtgctg agagcatcta 550
 gtttccactt cgattctgaa gaaaacaaac ataggcttat ccacttctca 600
 gtatttttag gtctattgct tgttgaatt ctggaggctc tgtttgggct 650
 cagtcaagata gtcacgtggt tctctggctg tctgtgtgga gtctctaagc 700
 gaagaagta aattgtgtag tttaatggga ataaaatgta agtatcagta 750
 gtttgaaaaa aaaaaa 766

<210> 258
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 258
 Met Thr Cys Cys Glu Gly Trp Thr Ser Cys Asn Gly Phe Ser Leu
 1 5 10 15
 Leu Val Leu Leu Leu Leu Gly Val Val Leu Asn Ala Ile Pro Leu
 20 25 30
 Ile Val Ser Leu Val Glu Glu Asp Gln Phe Ser Gln Asn Pro Ile

THE FUTURE OF THE FUTURE

<400> 260

<210> 261

<211> 636

<212> DNA

<213> Homo sapiens

<400> 261

<210> 262

<211> 89

<212> PRT

<213> Homo sapiens

<400> 262
Met Glu Arg Val Thr Leu Ala Leu Leu Leu Leu Ala Gly Leu Thr
1 5 10 15
Ala Leu Glu Ala Asn Asp Pro Phe Ala Asn Lys Asp Asp Pro Phe
20 25 30
Tyr Tyr Asp Trp Lys Asn Leu Gln Leu Ser Gly Leu Ile Cys Gly
35 40 45
Gly Leu Leu Ala Ile Ala Gly Ile Ala Ala Val Leu Ser Gly Lys
50 55 60
Cys Lys Tyr Lys Ser Ser Gln Lys Gln His Ser Pro Val Pro Glu
65 70 75
Lys Ala Ile Pro Leu Ile Thr Pro Gly Ser Ala Thr Thr Cys
80 85

<210> 263
<211> 1676
<212> DNA
<213> Homo sapiens

<400> 263
ggagaagagg ttgtgtggga caagctgctc ccgacagaag gatgtcgctg 50
ctgagcctgc cctggctggg cctcagaccg gtggcaatgt ccccatggct 100
actcctgctg ctggttgtgg gctcctggct actcgcccg atcctggctt 150
ggacctatgc cttctataac aactgccgcc ggctccagtg ttccaccag 200
ccccaaaac ggaactggtt ttggggtcac ctgggacctg tcaactctac 250
agaggagggc ttgaaggact cgaccagat gtcggccacc tattccagg 300
gctttacggt atggctgggt cccatcatcc ccttcacgt tttatgccac 350
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gccttcaccat tcaacatcct gaagtctat ataacgatct tcaacaagag 550
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gtcgtctgga catgtttgag cacatcagcc tcatgacctt ggacagtcta 650
cagaaatgca tcttcagctt tgacagccat tgtcaggaga ggccagtgta 700
atatattgcc accatcttgg agctcagtc cctgttagag aaaagaagcc 750
agcatatcct ccagcacatg gactttctgt attacctct ccatgacggg 800
cggcgcttcc acagggcctg ccgcctgggt catgaattca cagacgctgt 850
catccgggag cggcgtcgca cctcccccac tcagggtatt gatgattttt 900
tcaaaagacaa agccaagtcc aagactttgg atttcattga tgtgcttctg 950

ctgagcaagg atgaagatgg gaaggcattg tcagatgagg atataagagc 1000
 agaggctgac accttcatgt ttggaggcca tgacaccacg gccagtggcc 1050
 tctcctgggt cctgtacaac cttgcgaggg acccagaata ccaggagcgc 1100
 tgccgacagg aggtgcaaga gcttctgaag gaccgcgac ctaagagat 1150
 tgaatgggac gacctggccc agctgccctt cctgaccatg tgcgtgaagg 1200
 agagcctgag gttacatccc ccagctccct tcactctccg atgctgcacc 1250
 caggacattg ttctccaga tggccgagtc atcccaaaag gcattacctg 1300
 cctcatcgat attatagggg tccatcacia cccaactgtg tggcgggac 1350
 ctgagggtcta cgaccccttc cgctttgacc cagagaacag caaggggagg 1400
 tcacctctg cttttattcc tttctccgca gggcccagga actgcatcgg 1450
 gcaggcgctc gccatggcgg agatgaaagt ggtcctggcg ttgatgtgc 1500
 tgcacttcg gttcctgcca gaccacactg agccccgcag gaagtggaa 1550
 ttgatcatgc gcgccgagg cggtctttgg ctgcgggttg agccctgaa 1600
 tgtaggcttg cagtgacttt ctgaccatc cacctgtttt ttgcagatt 1650
 gtcataaata aaacgggtgt gtcaaa 1676

<210> 264
 <211> 524
 <212> PRT
 <213> Homo sapiens

<400> 264
 Met Ser Leu Leu Ser Leu Pro Trp Leu Gly Leu Arg Pro Val Ala
 1 5 10 15
 Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu
 20 25 30
 Leu Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys
 35 40 45
 Arg Arg Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe
 50 55 60
 Trp Gly His Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys
 65 70 75
 Asp Ser Thr Gln Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val
 80 85 90
 Trp Leu Gly Pro Ile Ile Pro Phe Ile Val Leu Cys His Pro Asp
 95 100 105
 Thr Ile Arg Ser Ile Thr Asn Ala Ser Ala Ala Ile Ala Pro Lys
 110 115 120
 Asp Asn Leu Phe Ile Arg Phe Leu Lys Pro Trp Leu Gly Glu Lys
 125 130 135

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Leu | Ser | Gly | Gly | Asp | Lys | Trp | Ser | Arg | His | Arg | Arg | Met |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Leu | Thr | Pro | Ala | Phe | His | Phe | Asn | Ile | Leu | Lys | Ser | Tyr | Ile | Thr |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ile | Phe | Asn | Lys | Ser | Ala | Asn | Ile | Met | Leu | Asp | Lys | Trp | Gln | His |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ala | Ser | Glu | Gly | Ser | Ser | Arg | Leu | Asp | Met | Phe | Glu | His | Ile |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ser | Leu | Met | Thr | Leu | Asp | Ser | Leu | Gln | Lys | Cys | Ile | Phe | Ser | Phe |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Asp | Ser | His | Cys | Gln | Glu | Arg | Pro | Ser | Glu | Tyr | Ile | Ala | Thr | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Leu | Glu | Leu | Ser | Ala | Leu | Val | Glu | Lys | Arg | Ser | Gln | His | Ile | Leu |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Gln | His | Met | Asp | Phe | Leu | Tyr | Tyr | Leu | Ser | His | Asp | Gly | Arg | Arg |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Phe | His | Arg | Ala | Cys | Arg | Leu | Val | His | Asp | Phe | Thr | Asp | Ala | Val |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ile | Arg | Glu | Arg | Arg | Arg | Thr | Leu | Pro | Thr | Gln | Gly | Ile | Asp | Asp |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Phe | Phe | Lys | Asp | Lys | Ala | Lys | Ser | Lys | Thr | Leu | Asp | Phe | Ile | Asp |
| | | | | 290 | | | | | 295 | | | | | 300 |
| Val | Leu | Leu | Leu | Ser | Lys | Asp | Glu | Asp | Gly | Lys | Ala | Leu | Ser | Asp |
| | | | | 305 | | | | | 310 | | | | | 315 |
| Glu | Asp | Ile | Arg | Ala | Glu | Ala | Asp | Thr | Phe | Met | Phe | Gly | Gly | His |
| | | | | 320 | | | | | 325 | | | | | 330 |
| Asp | Thr | Thr | Ala | Ser | Gly | Leu | Ser | Trp | Val | Leu | Tyr | Asn | Leu | Ala |
| | | | | 335 | | | | | 340 | | | | | 345 |
| Arg | His | Pro | Glu | Tyr | Gln | Glu | Arg | Cys | Arg | Gln | Glu | Val | Gln | Glu |
| | | | | 350 | | | | | 355 | | | | | 360 |
| Leu | Leu | Lys | Asp | Arg | Asp | Pro | Lys | Glu | Ile | Glu | Trp | Asp | Asp | Leu |
| | | | | 365 | | | | | 370 | | | | | 375 |
| Ala | Gln | Leu | Pro | Phe | Leu | Thr | Met | Cys | Val | Lys | Glu | Ser | Leu | Arg |
| | | | | 380 | | | | | 385 | | | | | 390 |
| Leu | His | Pro | Pro | Ala | Pro | Phe | Ile | Ser | Arg | Cys | Cys | Thr | Gln | Asp |
| | | | | 395 | | | | | 400 | | | | | 405 |
| Ile | Val | Leu | Pro | Asp | Gly | Arg | Val | Ile | Pro | Lys | Gly | Ile | Thr | Cys |
| | | | | 410 | | | | | 415 | | | | | 420 |
| Leu | Ile | Asp | Ile | Ile | Gly | Val | His | His | Asn | Pro | Thr | Val | Trp | Pro |
| | | | | 425 | | | | | 430 | | | | | 435 |
| Asp | Pro | Glu | Val | Tyr | Asp | Pro | Phe | Arg | Phe | Asp | Pro | Glu | Asn | Ser |
| | | | | 440 | | | | | 445 | | | | | 450 |

Lys Gly Arg Ser Pro Leu Ala Phe Ile Pro Phe Ser Ala Gly Pro
 455 460 465
 Arg Asn Cys Ile Gly Gln Ala Phe Ala Met Ala Glu Met Lys Val
 470 475 480
 Val Leu Ala Leu Met Leu Leu His Phe Arg Phe Leu Pro Asp His
 485 490 495
 Thr Glu Pro Arg Arg Lys Leu Glu Leu Ile Met Arg Ala Glu Gly
 500 505 510
 Gly Leu Trp Leu Arg Val Glu Pro Leu Asn Val Gly Leu Gln
 515 520

<210> 265
 <211> 584
 <212> DNA
 <213> Homo sapiens

<400> 265
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 ctggcctcct gctgtttgct tttcacagga ttcttaaatc ctctcttctc 100
 tcttctcttc ctgactcca gggaaatata ctttcaactc tcagcacctc 150
 atgaagacgc gcgcttaact ccggaggagc tagaaagagc ttcccttcta 200
 cagatattgc cagagatgct ggggtgcagaa agaggggata ttctcaggaa 250
 agcagactca agtaccaca tttttaaccc aagaggaaat ttgagaaaagt 300
 ttcaggattt ctctggacaa gatcctaaca ttttactgag tcatcttttg 350
 gccagaatct ggaaaccata caagaaacgt gagactcctg attgcttctg 400
 gaaatactgt gtctgaagtg aaataagcat ctgttagtca gctcagaaac 450
 acccatctta gaatatgaaa aataacacaa tgcttgattt gaaaacagtg 500
 tggagaaaaa ctaggcaaac tacaccctgt tcattgttac ctggaaaata 550
 aatcctctat gttttgcaca aaaaaaaaaa aaaa 584

<210> 266
 <211> 124
 <212> PRT
 <213> Homo sapiens

<400> 266
 Met Tyr Lys Leu Ala Ser Cys Cys Leu Leu Phe Thr Gly Phe Leu
 1 5 10 15
 Asn Pro Leu Leu Ser Leu Pro Leu Leu Asp Ser Arg Glu Ile Ser
 20 25 30
 Phe Gln Leu Ser Ala Pro His Glu Asp Ala Arg Leu Thr Pro Glu
 35 40 45
 Glu Leu Glu Arg Ala Ser Leu Leu Gln Ile Leu Pro Glu Met Leu
 50 55 60

Gly Ala Glu Arg Gly Asp Ile Leu Arg Lys Ala Asp Ser Ser Thr
65 70
Asn Ile Phe Asn Pro Arg Gly Asn Leu Arg Lys Phe Gln Asp Phe
80 85 90
Ser Gly Gln Asp Pro Asn Ile Leu Leu Ser His Leu Leu Ala Arg
95 100 105
Ile Trp Lys Pro Tyr Lys Lys Arg Glu Thr Pro Asp Cys Phe Trp
110 115 120
Lys Tyr Cys Val

<210> 267
<211> 654
<212> DNA
<213> Homo sapiens

<400> 267
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cacctctggg atgggggttg tggtttaaaa caaacgccag tcatcctata 100
taagacactg acagccacca ggcaccacat ccgccaggaa ctgcaggccc 150
acctgtctgc aaccacagctg aggccatgcc ctccccaggg accgtctgca 200
gcctctgct cctcgcatg ctctggctgg acttgccat ggccaggctcc 250
agcttctcta gccctgaaca ccagagagtc cagcagagaa aggagtcgaa 300
gaagccacca gccaaagtgc agccccgagc tctagcaggc tggtctcgcc 350
cggaagatgg aggtcaagca gaagggggcag aggatgaact ggaagtccgg 400
ttcaacgccc cctttgatgt tggaatcaag ctgtcagggg ttcagtacca 450
gcagcacagc caggccctgg ggaagtttct tcaggacatc ctctgggaag 500
aggccaaaga ggccccagcc gacaagtgat cgcccaaac cttactcac 550
ctctctctaa gtttagaagc gctcatctgg cttttcgctt gcttctgcag 600
caactccac gactgttgta caagctcagg aggcgaataa atgttcaaac 650
tgta 654

<210> 268
<211> 117
<212> PRT
<213> Homo sapiens

<400> 268
Met Pro Ser Pro Gly Thr Val Cys Ser Leu Leu Leu Leu Gly Met
1 5 10 15
Leu Trp Leu Asp Leu Ala Met Ala Gly Ser Ser Phe Leu Ser Pro
20 25 30
Glu His Gln Arg Val Gln Gln Arg Lys Glu Ser Lys Lys Pro Pro
35 40 45

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ala | Lys | Leu | Gln | Pro | Arg | Ala | Leu | Ala | Gly | Trp | Leu | Arg | Pro | Glu |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Asp | Gly | Gly | Gln | Ala | Glu | Gly | Ala | Glu | Asp | Glu | Leu | Glu | Val | Arg |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Phe | Asn | Ala | Pro | Phe | Asp | Val | Gly | Ile | Lys | Leu | Ser | Gly | Val | Gln |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Tyr | Gln | Gln | His | Ser | Gln | Ala | Leu | Gly | Lys | Phe | Leu | Gln | Asp | Ile |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Trp | Glu | Glu | Ala | Lys | Glu | Ala | Pro | Ala | Asp | Lys | | | |
| | | | | 110 | | | | | 115 | | | | | |

<210> 269

<211> 1332

<212> DNA

<213> Homo sapiens

<400> 269

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agaatatgaa cacgtggctg ctgttctctc ccctgttccc ggtgcagggtg 150
cagaccctga tagtcgtgat catcgggatg ctctgtctcc tgctggactt 200
tcttggtctg gtgcacctgg gccagctgct catcttccac atctacctga 250
gtatgtcccc caccctaagc ccccgatccc cccaaggctg ggtggtcaga 300
gctgctcctc ttacacctct acttgagtat gtccctaacc ctgagccccc 350
cacgcctggg gccagagtct ttgtcccccg tgtgctgcat gtgtcagggt 400
cagcctctcc cagaagttag atcatggaca aaaagggcaa atcacaggaa 450
gaaattaaat ccattgaggac ccagcaggcc cagcaagaag ctgaactcac 500
gccgagacct gcaggagtgg tgccagggtc ttgaagtaac aagtttaaaa 550
tgttccagaa caattggaat gaattctatta ggcaagaaca ggacattatg 600
aaataaggac aggtggactt ccaaaaaaac aagtagaaat tctaacaatg 650
aaatatatta caggcaggtc acccactaac caaacaactg aagcgagagc 700
tgtgtgtctg cttgtgtctc cagtgggac agcggtaggc ggtcagtcac 750
gttgctgaac gacggagggt aaactcccca gccccaagaa aacctgtgtt 800
ggaagtaaca acaacctccc tgctcctggc accagccgtt ttggtcatgg 850
tgggccagct gcaaagcgtc ttccattctc tgggcagtgg tggccccgag 900
gctgtggcct ctcagggggg ttctgtggac acgggcagca gagtgtgtcc 950
aggccagccc ccaagaatgc cctgctcctg acagcttgcc caacctctgg 1000
tcagggcaga gggagttggg tgggtcaggc tctgggctca cctccatctc 1050

cagagcatcc cctgcctgca gttgtggcaa gaacgcccag ctcagaatga 1100
 acacacccca ccaagagcct cctgttcat aaccacaggt tacctctaa 1150
 accactgtcc ccacacaacc ctggggatgt tttaaaacac acacctctaa 1200
 cgcatatctt acagtcactg ttgtcttgcc tgagggttga attttttta 1250
 atgaaagtgc aatgaaaatc actggattaa atcctacgga cacagagctg 1300
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1332

<210> 270
 <211> 142
 <212> PRT
 <213> Homo sapiens

<400> 270
 Met Asn Thr Trp Leu Leu Phe Leu Pro Leu Phe Pro Val Gln Val
 1 5 10 15
 Gln Thr Leu Ile Val Val Ile Ile Gly Met Leu Val Leu Leu Leu
 20 25 30
 Asp Phe Leu Gly Leu Val His Leu Gly Gln Leu Leu Ile Phe His
 35 40 45
 Ile Tyr Leu Ser Met Ser Pro Thr Leu Ser Pro Arg Ser Pro Gln
 50 55 60
 Gly Trp Val Val Arg Ala Ala His Leu Thr Pro Leu Leu Glu Tyr
 65 70 75
 Val Pro Asn Pro Glu Pro Pro Thr Pro Gly Ala Arg Val Phe Val
 80 85 90
 Pro Arg Val Arg Met Cys Ser Gly Ser Ala Ser Pro Arg Ser Glu
 95 100 105
 Ile Met Asp Lys Lys Gly Lys Ser Gln Glu Glu Ile Lys Ser Met
 110 115 120
 Arg Thr Gln Gln Ala Gln Gln Glu Ala Glu Leu Thr Pro Arg Pro
 125 130 135
 Ala Gly Val Val Pro Gly Ala
 140

<210> 271
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 271
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 cctatctgcc atcctcagca tgctatcact cagcttctcc acaacatccc 150
 tgctcagcaa ctactggtt gtgggcacac agaaggtgcc caagcccctg 200
 tgcgagaaag gtctggcagc caagtgtctt gacatgccag tgtccttgga 250

tggagatacc aacacatcca cccaggaggt ggtacaatac aactgggaga 300
 ctggggatga ccggttctcc ttccggagct tccggagtgg catgtggcta 350
 tctgtgtagg aaactgtgga agaaccaggg gagagggtgcc gaagtttcat 400
 tgaacttaca ccaccagcca agagagggtga gaaaggacta ctggaatttg 450
 ccacgttgca aggcccatgt caccocactc tccgatttgg agggaagcgg 500
 ttgatggaga aggcctccct cccctccctc cccttggggc ttgttggoaa 550
 aaatcctatg gttatccctg ggaacgcaga tcacctacat cggacttcaa 600
 ttcacagctt tctcctctgt actaacagac ttgtactca ctgggaaccc 650
 tgctgtggg ctcaaaactga ggcctttgc tgctgtttcc tctgtcctgt 700
 cagggtctct ggggatgggt gccacatga tgtattcaca agtcttccaa 750
 gcgactgtca acttgggtcc agaagactgg agaccacatg ttggaatta 800
 tggctggggc ttctacatgg cctggctctc ctccacctgc tgcattggct 850
 cggtgtcac cacctcaac acgtacacca ggatgggtgt ggagttaag 900
 tgcaagcata gtaagagctt caaggaatac ccgaactgcc taccacatca 950
 ccatcagtg ttccctcggg ggctgtcaag tgcagccccc accgtgggtc 1000
 ctttgaccag ctaccaccag tatcataatc agcccatcca ctctgtctct 1050
 gagggagtgc acttctactc agagctgcgg aacaaggatg ttcaaagagg 1100
 ggccagccag gagctgaaag aagcagttag gtcattctga gaggaagagc 1150
 agtgtagga gttaagcggg ttgggggagt aggcttgagc cctaccttac 1200
 aogtctgctg attatcaaca tgtgcttaag ccaacatccg tctcttgagc 1250
 atggttttta gaggtacga ataaggctat gaataagggt tatctttaag 1300
 tcctaaggga ttctgggtg ccaactgctct ctttctctct acagctccat 1350
 cttgtttcac ccacccaca tctcacacat ccagaattcc cttctttact 1400
 gatagtttct gtgcaggtt ctgggctaaa ccatggagat aaaaagaaga 1450
 gtaaaatata ctcccgacc ttaaggatct gaaa 1484

<210> 272

<211> 285

<212> PRT

<213> Homo sapiens

<400> 272

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Lys | Met | Glu | Leu | Ser | Lys | Ala | Phe | Ser | Gly | Gln | Arg | Thr |
| 1 | | | | | 5 | | | | | 10 | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Leu | Leu | Ser | Ala | Ile | Leu | Ser | Met | Leu | Ser | Leu | Ser | Phe | Ser | Thr |
| | | | | 20 | | | | | 25 | | | | | 30 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Thr | Ser | Leu | Leu | Ser | Asn | Tyr | Trp | Phe | Val | Gly | Thr | Gln | Lys | Val |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

<210> 275
 <211> 2694
 <212> DNA
 <213> Homo sapiens

<400> 275
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 gtcgtggagc caggagcgac gtcaccgccca tggcaggcat caaagctttg 100
 attagtttgt cctttggagg agcaatcgga ctgatgtttt tgatgcttgg 150
 atgtgcocctt ccaatatata acaataactg gccctctctt gttctatttt 200
 tttacatcct ttcacctatt ccatactgca tagcaagaag attagtggat 250
 gatacagatg ctatgagtaa cgcttgtaag gaacttgcca tctttcttac 300
 aacgggcatt gtcgtgtcag cttttggact ccctattgta ttgcccagag 350
 cacatctgat tgagtggga gcttgtgcac ttgttctcac aggaacaca 400
 gtcactcttg caactatact aggccttttc ttggtcttgg gaagcaatga 450
 cgacttcagc tggcagcagt ggtgaaaaga aattactgaa ctattgtcaa 500
 atggacttcc tgcatttgt tggccattca cgcacacagg agatggggca 550
 gttaatgctg aatggtatag caagcctctt ggggggtatt taggtgctcc 600
 cttctcactt ttattgtaag catactattt tcacagagac ttgctgaagg 650
 attaaaagga ttttctcttt tggaaaagct tgactgattt cacacttata 700
 tatagtatgc tttttgtggt gtcctgctga atttaaatat ttatgtgttt 750
 ttctctgttag gttgattttt ttggaaatca atatgcaatg ttaaacactt 800
 ttttaaatga atcatttgca ttggttagga attcagaatt ccgccggctc 850
 tattactggt caagtacatc ttttctctta aaattattta gcctccatta 900
 ttacaaaaaa ttataaaaat aagttttcag tcagtcagga tgacatcact 950
 cccaatgtta tgcagacata cagacggttg gcatacgtta tagactgtat 1000
 actcagtga aatatagctg catttataco tcagaggggc caagtgttaa 1050
 tgcccattgcc ctccgttaag ggttggttgg tttactggta gacagatgtt 1100
 ttgtggattg aaaattattt tatggaattg ctacagagga gtgcttttct 1150
 tctcaattgt tagaagaatt tatgttaaac ttttaaggtaa ggggtgtaaa 1200
 acatttttga gataagggtt ttattttatgt ttattattgt tagagtga 1250
 tgcaattggt gaagaaatga cattgaaatt ccagtttttg aatcctgttt 1300
 ctattttata gtgaaatttg tgatctccta tcaacctttc atgttttacc 1350
 ctgttataaa ggacatacat ggaaccacta ctgatgaggg acagttgtat 1400
 gtttgcatca tatatgccag aaaaccttcc totgcttcct ccttttgact 1450

tatttggat gttgtatata ttacataaaa taacttttca aatatagttt 1500
 aataacactt agaagtgttt acttacctgg aaaataattg ctatgccgta 1550
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 cttgttagtc ttacagataa ttcattgcatt aacagtttaa gatttagacc 1650
 atggtaatag tagttcttat tctotaagggt tatatcatat gtaattttaaa 1700
 agtattttta agacaagttt cctgtatacc tctgaactgt tttgattttg 1750
 agttcatcat gatagatctg ctgtttcctt ataaaaggca tttgttgtgt 1800
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 acctgaccaa aaaattccca gtaaccaggc atgatcaatt tatagtggtc 1900
 gtttacatct aataattatc aggacttttt tcaggagtgg gttataaaaa 1950
 cattcaagtt ggtctgacag tatttttgta aggatatttg tttgtatgtt 2000
 tattcagtat acttacataa aaattatttc gccatcagcc aaaactcagt 2050
 aatcatgaca gctgtctgtt gttttatgaa gtttatttct caagaaaatg 2100
 ggaataaatt tgggatttgt tcagcttttt tactaaagat gcctaaagcc 2150
 acagggtttta ttgcctaact taagccatga ctttttagata tgagatgacg 2200
 ggaagcagga cgaaatatcg gcgtgtggct ggagccttcc cactggaggc 2250
 tgaaagtggc ttgtggtatt ataagtcca gatttcaaga ggaaggtgca 2300
 ggtacacatg agtttagagag ctggtgagac agttgggaac tctttgtgct 2350
 tgtgatctac tggacttttt ttttgagga agtgcattct ctggctcttc 2400
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 gctgtctctg atttctaggc tagttacttg agatatgaat ttccataga 2600
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 tgatgaaaca ataaagattt taaatatcta ttttaaaaaa aaaa 2694

<210> 276

<211> 131

<212> PRT

<213> Homo sapiens

<400> 276

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Gly | Ile | Lys | Ala | Leu | Ile | Ser | Leu | Ser | Phe | Gly | Gly | Ala |
| 1 | | | | | 5 | | | | 10 | | | | | 15 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Gly | Leu | Met | Phe | Leu | Met | Leu | Gly | Cys | Ala | Leu | Pro | Ile | Tyr |
| | | | | 20 | | | | | 25 | | | | 30 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asn | Lys | Tyr | Trp | Pro | Leu | Phe | Val | Leu | Phe | Phe | Tyr | Ile | Leu | Ser |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

| | | |
|---|-------------------------|-----|
| 35 | 40 | 45 |
| Pro Ile Pro Tyr Cys Ile Ala Arg Arg | Leu Val Asp Asp Thr Asp | |
| 50 | 55 | 60 |
| Ala Met Ser Asn Ala Cys Lys Glu Leu | Ala Ile Phe Leu Thr Thr | |
| 65 | 70 | 75 |
| Gly Ile Val Val Ser Ala Phe Gly Leu | Pro Ile Val Phe Ala Arg | |
| 80 | 85 | 90 |
| Ala His Leu Ile Glu Trp Gly Ala Cys | Ala Leu Val Leu Thr Gly | |
| 95 | 100 | 105 |
| Asn Thr Val Ile Phe Ala Thr Ile Leu | Gly Phe Phe Leu Val Phe | |
| 110 | 115 | 120 |
| Gly Ser Asn Asp Phe Ser Trp Gln Gln Trp | | |
| 125 | 130 | |

<210> 277

<211> 4104

<212> DNA

<213> Homo sapiens

<400> 277

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cgccgcgcgc cgcaacctcc caccgcccgc cgcccgcgcg ccgcgcgcgcg 200

caaagcatga gtgagccgcg tctctgcagc tgcccggggc gcgaatggca 250

ggctgtttcc gcggagtaaa aggtggcgcc ggtcagtggt cgtttccaat 300

gacggacatt aaccagactg tcagatcctg gggagtcgcg agccccgagt 350

ttggagtttt ttccccccac aacgtcacag tccgaactgc agaggggaaag 400

gaaggcggca ggaaggcgaa gctcggggctc cggcacgtag ttgggaaact 450

tgccgggtcct agaagtgcgc tccccgcctt gccggccgcc cttgcagccc 500

cgagccgagc agcaaagtga gacattgtgc gcctgcaga tccgcgggcc 550

gcggaccggg gctgcctcgg aaacacagag gggctctctc tcgccctgca 600

tataattagc ctgcacacaa agggagcagc tgaatggagg ttgtcactct 650

ctggaagagg atttctgacc gagcgcttcc aatggacatt ctccagtcct 700

tctgaaaga ttctcgctaa tggatttcct gctgctcggt ctctgtctat 750

actggctgct gaggaggccc tcgggggtgg tcttgtgtct gctgggggcc 800

tgctttcaga tgctgccgcg cgccccacgc gggtgccgcg agctgtgccg 850

gtgcgagggg cggctgctgt actgcgaggc gctcaacctc accgaggcgc 900

cccacaacct gtccggcctg ctgggcttgt ccctgcgcta caacagcctc 950

tcggagctgc gcgcgggcca gttcacgggg ttaatgcagc tcacgtggct 1000
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 aactgcgcgc agttaaggaa ctcacgtga gttccaacca gatcacccaa 1100
 ctgcccaca ccaccttccg gcccatgccc aacctgcga gcgtggacct 1150
 ctctgtacaac aagctgcagg cgctcgcgcc cgacctctc caccgggtgc 1200
 ggaagctcac cagctgcat atgcgggcca acgocatcca gtttgtgcc 1250
 gtgcgcatct tccaggactg ccgcagcctc aagtttctcg acatcggata 1300
 caatcagctc aagagtctgg cgcgcaactc tttcgccggc ttgtttaagc 1350
 tcaccgagct gcacctogag cacaacgact tggtaagggt gaacttcgcc 1400
 cacttcgcgc gcctcatctc cctgcactcg ctctgctgc ggaggaacaa 1450
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 tggacttgct gggcaacgag atcgagtaca tggagcccca tgtgttcgag 1550
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 ccggagtagc gcacagggcg aggaagctct ggacgcctg tacgccttc 1800
 acctgtgcga ggaaggggc gagccacca gcggccacct gctctcgcc 1850
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<210> 278
 <211> 522
 <212> PRT
 <213> Homo sapiens

<400> 278

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Asp | Phe | Leu | Leu | Leu | Gly | Leu | Cys | Leu | Tyr | Trp | Leu | Leu | Arg | |
| 1 | | | 5 | | | | | | 10 | | | | | 15 | |
| Arg | Pro | Ser | Gly | Val | Val | Leu | Cys | Leu | Leu | Gly | Ala | Cys | Phe | Gln | |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Met | Leu | Pro | Ala | Ala | Pro | Ser | Gly | Cys | Pro | Gln | Leu | Cys | Arg | Cys | |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Glu | Gly | Arg | Leu | Leu | Tyr | Cys | Glu | Ala | Leu | Asn | Leu | Thr | Glu | Ala | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Pro | His | Asn | Leu | Ser | Gly | Leu | Leu | Gly | Leu | Ser | Leu | Arg | Tyr | Asn | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| Ser | Leu | Ser | Glu | Leu | Arg | Ala | Gly | Gln | Phe | Thr | Gly | Leu | Met | Gln | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Leu | Thr | Trp | Leu | Tyr | Leu | Asp | His | Asn | His | Ile | Cys | Ser | Val | Gln | |
| | | | 95 | | | | | | 100 | | | | | 105 | |
| Gly | Asp | Ala | Phe | Gln | Lys | Leu | Arg | Arg | Val | Lys | Glu | Leu | Thr | Leu | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Ser | Ser | Asn | Gln | Ile | Thr | Gln | Leu | Pro | Asn | Thr | Thr | Phe | Arg | Pro | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Met | Pro | Asn | Leu | Arg | Ser | Val | Asp | Leu | Ser | Tyr | Asn | Lys | Leu | Gln | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Ala | Leu | Ala | Pro | Asp | Leu | Phe | His | Gly | Leu | Arg | Lys | Leu | Thr | Thr | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Leu | His | Met | Arg | Ala | Asn | Ala | Ile | Gln | Phe | Val | Pro | Val | Arg | Ile | |
| | | | 170 | | | | | | 175 | | | | | 180 | |
| Phe | Gln | Asp | Cys | Arg | Ser | Leu | Lys | Phe | Leu | Asp | Ile | Gly | Tyr | Asn | |
| | | | 185 | | | | | | 190 | | | | | 195 | |
| Gln | Leu | Lys | Ser | Leu | Ala | Arg | Asn | Ser | Phe | Ala | Gly | Leu | Phe | Lys | |
| | | | 200 | | | | | | 205 | | | | | 210 | |
| Leu | Thr | Glu | Leu | His | Leu | Glu | His | Asn | Asp | Leu | Val | Lys | Val | Asn | |
| | | | 215 | | | | | | 220 | | | | | 225 | |
| Phe | Ala | His | Phe | Pro | Arg | Leu | Ile | Ser | Leu | His | Ser | Leu | Cys | Leu | |
| | | | 230 | | | | | | 235 | | | | | 240 | |
| Arg | Arg | Asn | Lys | Val | Ala | Ile | Val | Val | Ser | Ser | Leu | Asp | Trp | Val | |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Trp | Asn | Leu | Glu | Lys | Met | Asp | Leu | Ser | Gly | Asn | Glu | Ile | Glu | Tyr | |
| | | | 260 | | | | | | 265 | | | | | 270 | |
| Met | Glu | Pro | His | Val | Phe | Glu | Thr | Val | Pro | His | Leu | Gln | Ser | Leu | |
| | | | 275 | | | | | | 280 | | | | | 285 | |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gln | Leu | Asp | Ser | Asn | Arg | Leu | Thr | Tyr | Ile | Glu | Pro | Arg | Ile | Leu | 290 | 295 | 300 |
| Asn | Ser | Trp | Lys | Ser | Leu | Thr | Ser | Ile | Thr | Leu | Ala | Gly | Asn | Leu | 305 | 310 | 315 |
| Trp | Asp | Cys | Gly | Arg | Asn | Val | Cys | Ala | Leu | Ala | Ser | Trp | Leu | Ser | 320 | 325 | 330 |
| Asn | Phe | Gln | Gly | Arg | Tyr | Asp | Gly | Asn | Leu | Gln | Cys | Ala | Ser | Pro | 335 | 340 | 345 |
| Glu | Tyr | Ala | Gln | Gly | Glu | Asp | Val | Leu | Asp | Ala | Val | Tyr | Ala | Phe | 350 | 355 | 360 |
| His | Leu | Cys | Glu | Asp | Gly | Ala | Glu | Pro | Thr | Ser | Gly | His | Leu | Leu | 365 | 370 | 375 |
| Ser | Ala | Val | Thr | Asn | Arg | Ser | Asp | Leu | Gly | Pro | Pro | Ala | Ser | Ser | 380 | 385 | 390 |
| Ala | Thr | Thr | Leu | Ala | Asp | Gly | Gly | Glu | Gly | Gln | His | Asp | Gly | Thr | 395 | 400 | 405 |
| Phe | Glu | Pro | Ala | Thr | Val | Ala | Leu | Pro | Gly | Gly | Glu | His | Ala | Glu | 410 | 415 | 420 |
| Asn | Ala | Val | Gln | Ile | His | Lys | Val | Val | Thr | Gly | Thr | Met | Ala | Leu | 425 | 430 | 435 |
| Ile | Phe | Ser | Phe | Leu | Ile | Val | Val | Leu | Val | Leu | Tyr | Val | Ser | Trp | 440 | 445 | 450 |
| Lys | Cys | Phe | Pro | Ala | Ser | Leu | Arg | Gln | Leu | Arg | Gln | Cys | Phe | Val | 455 | 460 | 465 |
| Thr | Gln | Arg | Arg | Lys | Gln | Lys | Gln | Lys | Gln | Thr | Met | His | Gln | Met | 470 | 475 | 480 |
| Ala | Ala | Met | Ser | Ala | Gln | Glu | Tyr | Tyr | Val | Asp | Tyr | Lys | Pro | Asn | 485 | 490 | 495 |
| His | Ile | Glu | Gly | Ala | Leu | Val | Ile | Ile | Asn | Glu | Tyr | Gly | Ser | Cys | 500 | 505 | 510 |
| Thr | Cys | His | Gln | Gln | Pro | Ala | Arg | Glu | Cys | Glu | Val | | | | 515 | 520 | |

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<211> 46

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 279

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<210> 280

<211> 709

<212> DNA

<213> Homo sapiens

<400> 280
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 ccggcgcgcg cgttgagttc ccggcggaaca agatgggtgc agtcctgggt 200
 caagaaggtc acgccgtctc agacatgttc ctgcccgtgg atggggaaact 250
 cgtcctgggt tcaggagccg gattcggcgt ctacagctg ggctcgcacc 300
 tggactgtgg cgccggcgaa cctgccgtct tccgcgaact tgaccgcttc 350
 tctctggcatg acccgcaact gtggcgctct ggggacgagg cacctggcct 400
 cttcttcctg gacgccgagc gcgtgcctcg ccgccacgac gacgtcttct 450
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 gtgcgtgtcc gcagcatctc ggctctgggc cggaacttca cgcgcgaaga 550
 ggacctggct gtttctctg cgtcccgccg gggccgccta cgttccacg 600
 ggccggggcg gctgagcgtg gggcccgagg actgcgcgga ccgctcgggc 650
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 ccagcccct 709

<210> 281
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 281
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 20 25 30
 Asp Val Ala Ala Asn Trp Ser Gln Asn Arg Thr Pro Cys Ala Gly
 35 40 45
 Gly Ala Val Glu Phe Pro Ala Asp Lys Met Val Ser Val Leu Val
 50 55 60
 Gln Glu Gly His Ala Val Ser Asp Met Leu Leu Pro Leu Asp Gly
 65 70 75
 Glu Leu Val Leu Ala Ser Gly Ala Gly Phe Gly Val Ser Asp Val
 80 85 90
 Gly Ser His Leu Asp Cys Gly Ala Gly Glu Pro Ala Val Phe Arg
 95 100 105
 Asp Ser Asp Arg Phe Ser Trp His Asp Pro His Leu Trp Arg Ser
 110 115 120
 Gly Asp Glu Ala Pro Gly Leu Phe Phe Val Asp Ala Glu Arg Val
 125 130 135

Pro Cys Arg His Asp Asp Val Phe Phe Pro Pro Ser Ala Ser Phe
140 145 150

Arg Val Gly Leu Gly Pro Gly Ala Ser Pro Val Arg Val Arg Ser
155 160 165

Ile Ser Ala Leu Gly Arg Thr Phe Thr Arg Asp Glu Asp Leu Ala
170 175 180

Val Phe Leu Ala Ser Arg Ala Gly Arg Leu Arg Phe His Gly Pro
185 190 195

Gly Ala Leu Ser Val Gly Pro Glu Asp Cys Ala Asp Pro Ser Gly
200 205 210

Cys Val Cys Gly Asn Ala Glu Ala Gln Pro Trp Ile Cys Ala Ala
215 220 225

Leu Leu Gln Pro

<210> 282
<211> 644
<212> DNA
<213> Homo sapiens

<400> 282
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tgtgttttgc acttaccctg tgttctgcct ttggtggcga taacaaggga 150
cttgcaacta tcttctgcat ttgcaagtct ttggcattga cgtggtacag 200
ccttctcttc ataccatttg caaggagtag tgtgaagaag tgttttgcog 250
tgtgtcttgc ataattcatg gccagtttta tgaagctttg gaaggcacta 300
tggacagaag ctggtggaca gttttgtaac tatcttogaa acctctgtct 350
tacagacatg tgccttttat cttgcagcaa tgtgttgctt gtgattcgaa 400
catttgaggg ttacttttgg aagcaacaat acattctcga acctgaatgt 450
cagtgcaca ggatgagaag tgggttctgt atcttgtgga gtggaatctt 500
cctcatgtac ctgtttctct tctggatgtt gtccactga attccatga 550
atacaaacct attcagcaac agcaaaaaaa aaaaaaaaaa aaaaaaaaaa 600
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 644

<210> 283
<211> 77
<212> PRT
<213> Homo sapiens

<400> 283
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1 5 10 15
Leu Ile Ala Thr Ile Met Val Leu Leu Cys Phe Ala Leu Thr Leu

| | | | | | |
|---|----|--|----|--|----|
| | 20 | | 25 | | 30 |
| Cys Ser Ala Phe Trp Trp His Asn Lys Gly Leu Ala Leu Ile Phe | | | | | |
| | 35 | | 40 | | 45 |
| Cys Ile Leu Gln Ser Leu Ala Leu Thr Trp Tyr Ser Leu Ser Phe | | | | | |
| | 50 | | 55 | | 60 |
| Ile Pro Phe Ala Arg Asp Ala Val Lys Lys Cys Phe Ala Val Cys | | | | | |
| | 65 | | 70 | | 75 |
| Leu Ala | | | | | |

<210> 284
 <211> 2623
 <212> DNA
 <213> Homo sapiens

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 gagagaaaaat tagggggaga aaggacagag agagcaacta ccatccatag 200
 ccagatagat tatcttacac tgaactgato aagtactttg aaaaatgactt 250
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 accttttctc tccaaactaga ccagcaaaaag gttctactag tttcttttga 350
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 atattatgaa atattgtgtt cactgaagc aagttaactaa tgtttttatt 450
 acaaaaacct accctaacca ttatactttg gtaactggcc tctttgcaga 500
 gaatcatggg attgttgcaa atgatatgtt tgatcttatt cggacaacaa 550
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 accagtacct ggataaagac cactataccc tgattgatca atctccagta 1050
 gcagccatct tgccaaaaga aggtaaattt gatgaagtct atgaagcact 1100

| | | | | | |
|------------|--------------|-------------|-------------|-------------|------|
| aactcacgct | cactcctaatic | ttactgttta | caaaaagaa | gacgttccag | 1150 |
| aaaggtggca | ttacaaaatc | aacagctgaa | ttcaaccaat | catagcagtg | 1200 |
| gctgatgaag | ggtggcacat | ttcacagaat | aagtcagatg | actttctgtt | 1250 |
| aggcaaccac | ggttacgata | atgcgtttag | agatatgcat | coaataattt | 1300 |
| tagcccatg | tctgctcttc | agaaaagaatt | tctcaaaaga | agccatgaac | 1350 |
| tccacagatt | tgtaccacct | actatgccac | ctcctcaata | tcactgccat | 1400 |
| gccacacaat | ggatcattct | ggaatgtcca | ggatctgctc | aattcagcaa | 1450 |
| tgccaagggt | ggtcccttat | acacagagta | ctatactcct | ccctggtagt | 1500 |
| gttaaaccag | cagaatatga | ccaagagggg | tcataccott | atttcatagg | 1550 |
| ggtctctctt | ggcagcatta | tagtgattgt | attttttgta | atttccatta | 1600 |
| agcatttaat | tcacagtcac | atacctgcct | tacaagatat | gcagtctgaa | 1650 |
| atagctcaac | cattattaca | agcctaattg | tactttgaag | tggattttgca | 1700 |
| tattgaagtg | gagattccat | aattatgtca | gtgtttaaag | gtttcaaatt | 1750 |
| ctgggaacc | agttccaaac | atctgcagaa | accattaagc | agttacatat | 1800 |
| ttaggtatac | acacacacac | acacacacac | atacacacac | acggacacaa | 1850 |
| atacttacac | ctgcaaagga | ataaagatgt | gagagtattgt | ctccattgtt | 1900 |
| cactgtagca | tagggataga | taagatcctg | ctttattttg | acttggcgca | 1950 |
| gataatgtat | atatttagca | actttgcact | atgtaaagta | ccttatatat | 2000 |
| tgcactttaa | atttctctoc | tgatgggtac | tttaatttga | aatgcacttt | 2050 |
| atggacagtt | atgtcttata | acttgattga | aaatgacaac | ttttgcacc | 2100 |
| catgtcacag | aatacttgtt | acgcatttgt | caaactgaag | gaaatttcta | 2150 |
| ataatccga | ataatgaaca | tagaaatcta | tctccataaa | ttgagagaag | 2200 |
| aagaagtgta | taagtgttga | aaattaaatg | tgataacctt | tgaaccttga | 2250 |
| attttggaga | tgtattccca | acagcagaa | gcaactgtgg | gcatttcttg | 2300 |
| tcttatttct | ttccagagaa | cgtggttttc | atttattttt | ccotcaaaag | 2350 |
| agagtcaaat | actgacagat | tcgttctaaa | tattattgtt | ctgtcataaa | 2400 |
| attattgtga | tttctgtatg | agtcataatta | ctgtgatttt | cataataatg | 2450 |
| aagacaccat | gaatatactt | ttcttctata | tagttcacga | atggcctgaa | 2500 |
| tagaagcaac | caggccaccat | ctcagcaatg | ttttctcttg | tttgtaatta | 2550 |
| tttgcctctt | tgaaaaataa | atcactatta | attacattaa | aaatcaaaat | 2600 |
| gdataaaaaa | aaaaaaaaaa | aaa | 2623 | | |

<210> 285

<211> 477
 <212> PRT
 <213> Homo sapiens

<400> 285

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Thr | Ser | Lys | Phe | Ile | Leu | Val | Ser | Phe | Ile | Leu | Ala | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ser | Leu | Ser | Thr | Thr | Phe | Ser | Leu | Gln | Leu | Asp | Gln | Gln | Lys | Val |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Leu | Leu | Val | Ser | Phe | Asp | Gly | Phe | Arg | Trp | Asp | Tyr | Leu | Tyr | Lys |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Val | Pro | Thr | Pro | His | Phe | His | Tyr | Ile | Met | Lys | Tyr | Gly | Val | His |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Val | Lys | Gln | Val | Thr | Asn | Val | Phe | Ile | Thr | Lys | Thr | Tyr | Pro | Asn |
| | | | | 65 | | | | | 70 | | | | | 75 |
| His | Tyr | Thr | Leu | Val | Thr | Gly | Leu | Phe | Ala | Glu | Asn | His | Gly | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Val | Ala | Asn | Asp | Met | Phe | Asp | Pro | Ile | Arg | Asn | Lys | Ser | Phe | Ser |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Leu | Asp | His | Met | Asn | Ile | Tyr | Asp | Ser | Lys | Phe | Trp | Glu | Glu | Ala |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Thr | Pro | Ile | Trp | Ile | Thr | Asn | Gln | Arg | Ala | Gly | His | Thr | Ser | Gly |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Ala | Met | Trp | Pro | Gly | Thr | Asp | Val | Lys | Ile | His | Lys | Arg | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Pro | Thr | His | Tyr | Met | Pro | Tyr | Asn | Glu | Ser | Val | Ser | Phe | Glu | Asp |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Arg | Val | Ala | Lys | Ile | Val | Glu | Trp | Phe | Thr | Ser | Lys | Glu | Pro | Ile |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Asn | Leu | Gly | Leu | Leu | Tyr | Trp | Glu | Asp | Pro | Asp | Asp | Met | Gly | His |
| | | | | 185 | | | | | 190 | | | | | 195 |
| His | Leu | Gly | Pro | Asp | Ser | Pro | Leu | Met | Gly | Pro | Val | Ile | Ser | Asp |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Ile | Asp | Lys | Lys | Leu | Gly | Tyr | Leu | Ile | Gln | Met | Leu | Lys | Lys | Ala |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Lys | Leu | Trp | Asn | Thr | Leu | Asn | Leu | Ile | Ile | Thr | Ser | Asp | His | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Met | Thr | Gln | Cys | Ser | Glu | Glu | Arg | Leu | Ile | Glu | Leu | Asp | Gln | Tyr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Leu | Asp | Lys | Asp | His | Tyr | Thr | Leu | Ile | Asp | Gln | Ser | Pro | Val | Ala |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Ala | Ile | Leu | Pro | Lys | Glu | Gly | Lys | Phe | Asp | Glu | Val | Tyr | Glu | Ala |
| | | | | 275 | | | | | 280 | | | | | 285 |
| Leu | Thr | His | Ala | His | Pro | Asn | Leu | Thr | Val | Tyr | Lys | Lys | Glu | Asp |

| | | |
|-------------------------------------|-------------------------|-----|
| 290 | 295 | 300 |
| Val Pro Glu Arg Trp His Tyr Lys Tyr | Asn Ser Arg Ile Gln Pro | |
| 305 | 310 | 315 |
| Ile Ile Ala Val Ala Asp Glu Gly Trp | His Ile Leu Gln Asn Lys | |
| 320 | 325 | 330 |
| Ser Asp Asp Phe Leu Leu Gly Asn His | Gly Tyr Asp Asn Ala Leu | |
| 335 | 340 | 345 |
| Ala Asp Met His Pro Ile Phe Leu Ala | His Gly Pro Ala Phe Arg | |
| 350 | 355 | 360 |
| Lys Asn Phe Ser Lys Glu Ala Met Asn | Ser Thr Asp Leu Tyr Pro | |
| 365 | 370 | 375 |
| Leu Leu Cys His Leu Leu Asn Ile Thr | Ala Met Pro His Asn Gly | |
| 380 | 385 | 390 |
| Ser Phe Trp Asn Val Gln Asp Leu Leu | Asn Ser Ala Met Pro Arg | |
| 395 | 400 | 405 |
| Val Val Pro Tyr Thr Gln Ser Thr Ile | Leu Leu Pro Gly Ser Val | |
| 410 | 415 | 420 |
| Lys Pro Ala Glu Tyr Asp Gln Glu Gly | Ser Tyr Pro Tyr Phe Ile | |
| 425 | 430 | 435 |
| Gly Val Ser Leu Gly Ser Ile Ile Val | Ile Val Phe Phe Val Ile | |
| 440 | 445 | 450 |
| Phe Ile Lys His Leu Ile His Ser Gln | Ile Pro Ala Leu Gln Asp | |
| 455 | 460 | 465 |
| Met His Ala Glu Ile Ala Gln Pro Leu | Leu Gln Ala | |
| 470 | 475 | |

<210> 286

<211> 1337

<212> DNA

<213> Homo sapiens

<400> 286

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 aacagggaca tgccacactg ggacgaaaag gcagtcaccc gcagggccaa 250
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<210> 287
 <211> 255
 <212> PRT
 <213> Homo sapiens

<400> 287
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 35 40 45
 Glu Asn Glu Glu Glu Glu Glu Glu Glu Gln Pro Pro Pro Thr
 50 55 60
 Pro Val Ser Gly Glu Glu Gly Arg Ala Ala Pro Asp Val Ala
 65 70 75
 Pro Ala Pro Gly Pro Ala Pro Arg Ala Pro Leu Asp Phe Arg Gly
 80 85 90
 Met Leu Arg Lys Leu Phe Ser Ser His Arg Phe Gln Val Ile Ile
 95 100 105
 Ile Cys Leu Val Val Leu Asp Ala Leu Leu Val Leu Ala Glu Leu
 110 115 120

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ile | Leu | Asp | Leu | Lys | Ile | Ile | Gln | Pro | Asp | Lys | Asn | Asn | Tyr | Ala |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Ala | Met | Val | Phe | His | Tyr | Met | Ser | Ile | Thr | Ile | Leu | Val | Phe | Phe |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Met | Met | Glu | Ile | Ile | Phe | Lys | Leu | Phe | Val | Phe | Arg | Leu | Ser | Ser |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Phe | Thr | Thr | Ser | Leu | Arg | Ser | Trp | Met | Pro | Val | Val | Val | Val | Val |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Ser | Phe | Ile | Leu | Asp | Ile | Val | Leu | Leu | Phe | Gln | Glu | His | Gln | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Glu | Ala | Leu | Gly | Leu | Leu | Ile | Leu | Leu | Arg | Leu | Trp | Arg | Val | Ala |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Arg | Ile | Ile | Asn | Gly | Ile | Ile | Ile | Ser | Val | Lys | Thr | Arg | Ser | Glu |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Arg | Gln | Leu | Leu | Arg | Leu | Lys | Gln | Met | Asn | Val | Gln | Leu | Ala | Ala |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Ile | Gln | His | Leu | Glu | Phe | Ser | Cys | Ser | Glu | Lys | Pro | Leu | Asp |
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 <211> 3334
 <212> DNA
 <213> Homo sapiens

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 aagaagctga ggctgggtgt taagattttg gacaaaaaga atgatggagc 350
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<210> 289
 <211> 469
 <212> PRT
 <213> Homo sapiens

<400> 289
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 20 25 30
 Lys Ser Ile Phe Lys Leu Ser Val Phe Ile Pro Ser Gln Glu Phe
 35 40 45
 Ser Thr Tyr Arg Gln Trp Lys Gln Lys Ile Val Gln Ala Gly Asp
 50 55 60
 Lys Asp Leu Asp Gly Gln Leu Asp Phe Glu Glu Phe Val His Tyr
 65 70 75
 Leu Gln Asp His Glu Lys Lys Leu Arg Leu Val Phe Lys Ile Leu
 80 85 90

| | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Asp | Lys | Lys | Asn | Asp | Gly | Arg | Ile | Asp | Ala | Gln | Glu | Ile | Met | Gln | 95 | 105 |
| Ser | Leu | Arg | Asp | Leu | Gly | Val | Lys | Ile | Ser | Glu | Gln | Gln | Ala | Glu | 110 | 120 |
| Lys | Ile | Leu | Lys | Ser | Met | Asp | Lys | Asn | Gly | Thr | Met | Thr | Ile | Asp | 125 | 135 |
| Trp | Asn | Glu | Trp | Arg | Asp | Tyr | His | Leu | Leu | His | Pro | Val | Glu | Asn | 140 | 150 |
| Ile | Pro | Glu | Ile | Ile | Leu | Tyr | Trp | Lys | His | Ser | Thr | Ile | Phe | Asp | 155 | 165 |
| Val | Gly | Glu | Asn | Leu | Thr | Val | Pro | Asp | Glu | Phe | Thr | Val | Glu | Glu | 170 | 180 |
| Arg | Gln | Thr | Gly | Met | Trp | Trp | Arg | His | Leu | Val | Ala | Gly | Gly | Gly | 185 | 195 |
| Ala | Gly | Ala | Val | Ser | Arg | Thr | Cys | Thr | Ala | Pro | Leu | Asp | Arg | Leu | 200 | 210 |
| Lys | Val | Leu | Met | Gln | Val | His | Ala | Ser | Arg | Ser | Asn | Asn | Met | Gly | 215 | 225 |
| Ile | Val | Gly | Gly | Phe | Thr | Gln | Met | Ile | Arg | Glu | Gly | Gly | Ala | Arg | 230 | 240 |
| Ser | Leu | Trp | Arg | Gly | Asn | Gly | Ile | Asn | Val | Leu | Lys | Ile | Ala | Pro | 245 | 255 |
| Glu | Ser | Ala | Ile | Lys | Phe | Met | Ala | Tyr | Glu | Gln | Ile | Lys | Arg | Leu | 260 | 270 |
| Val | Gly | Ser | Asp | Gln | Glu | Thr | Leu | Arg | Ile | His | Glu | Arg | Leu | Val | 275 | 285 |
| Ala | Gly | Ser | Leu | Ala | Gly | Ala | Ile | Ala | Gln | Ser | Ser | Ile | Tyr | Pro | 290 | 300 |
| Met | Glu | Val | Leu | Lys | Thr | Arg | Met | Ala | Leu | Arg | Lys | Thr | Gly | Gln | 305 | 315 |
| Tyr | Ser | Gly | Met | Leu | Asp | Cys | Ala | Arg | Arg | Ile | Leu | Ala | Arg | Glu | 320 | 330 |
| Gly | Val | Ala | Ala | Phe | Tyr | Lys | Gly | Tyr | Val | Pro | Asn | Met | Leu | Gly | 335 | 345 |
| Ile | Ile | Pro | Tyr | Ala | Gly | Ile | Asp | Leu | Ala | Val | Tyr | Glu | Thr | Leu | 350 | 360 |
| Lys | Asn | Ala | Trp | Leu | Gln | His | Tyr | Ala | Val | Asn | Ser | Ala | Asp | Pro | 365 | 375 |
| Gly | Val | Phe | Val | Leu | Leu | Ala | Cys | Gly | Thr | Met | Ser | Ser | Thr | Cys | 380 | 390 |
| Gly | Gln | Leu | Ala | Ser | Tyr | Pro | Leu | Ala | Leu | Val | Arg | Thr | Arg | Met | 395 | 405 |

Gln Ala Gln Ala Ser Ile Glu Gly Ala Pro Glu Val Thr Met Ser
 410 415 420
 Ser Leu Phe Lys His Ile Leu Arg Thr Glu Gly Ala Phe Gly Leu
 425 430 435
 Tyr Arg Gly Leu Ala Pro Asn Phe Met Lys Val Ile Pro Ala Val
 440 445 450
 Ser Ile Ser Tyr Val Val Tyr Glu Asn Leu Lys Ile Thr Leu Gly
 455 460 465
 Val Gln Ser Arg

<210> 290
 <211> 1658
 <212> DNA
 <213> Homo sapiens

<400> 290
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 atttcaggga gacactccat cacagtcact actgtcgct cagctgggaa 200
 cattggggag gatggaatcc tgagctgcac ttttgaacct gacatcaaac 250
 tttctgatat cgtgatacaa tggctgaagg aaggtgtttt aggcttggtc 300
 catgagttca aagaaggcaa agatgagctg tcggagcagg atgaaatgtt 350
 cagaggccgg acagcagtggt ttgctgatca agtgatagtt ggcaatgcct 400
 ctttcgggct gaaaaacgtg caactcacag atgctggcac ctacaaatgt 450
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 aaaaaaaaa 1658

<210> 291
 <211> 282
 <212> PRT
 <213> Homo sapiens

<400> 291
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 Ile Ser Gly Arg His Ser Ile Thr Val Thr Thr Val Ala Ser Ala
 35 40 45
 Gly Asn Ile Gly Glu Asp Gly Ile Leu Ser Cys Thr Phe Glu Pro
 50 55 60
 Asp Ile Lys Leu Ser Asp Ile Val Ile Gln Trp Leu Lys Glu Gly
 65 70 75
 Val Leu Gly Leu Val His Glu Phe Lys Glu Gly Lys Asp Glu Leu
 80 85 90
 Ser Glu Gln Asp Glu Met Phe Arg Gly Thr Ala Val Phe Ala
 95 100 105
 Asp Gln Val Ile Val Gly Asn Ala Ser Leu Arg Leu Lys Asn Val
 110 115 120
 Gln Leu Thr Asp Ala Gly Thr Tyr Lys Cys Tyr Ile Ile Thr Ser
 125 130 135
 Lys Gly Lys Gly Asn Ala Asn Leu Glu Tyr Lys Thr Gly Ala Phe
 140 145 150
 Ser Met Pro Glu Val Asn Val Asp Tyr Asn Ala Ser Ser Glu Thr

| | | | | | |
|---|-----|-------------------------|-----|-----|-----|
| | 155 | | 160 | | 165 |
| Leu Arg Cys Glu Ala Pro Arg Trp Phe | 170 | Pro Gln Pro Thr Val | 175 | Val | 180 |
| Trp Ala Ser Gln Val Asp Gln Gly Ala | 185 | Asn Phe Ser Glu Val Ser | 190 | 195 | |
| Asn Thr Ser Phe Glu Leu Asn Ser Glu | 200 | Asn Val Thr Met Lys Val | 205 | 210 | |
| Val Ser Val Leu Tyr Asn Val Thr Ile | 215 | Asn Asn Thr Tyr Ser Cys | 220 | 225 | |
| Met Ile Glu Asn Asp Ile Ala Lys Ala | 230 | Thr Gly Asp Ile Lys Val | 235 | 240 | |
| Thr Glu Ser Glu Ile Lys Arg Arg Ser | 245 | His Leu Gln Leu Leu Asn | 250 | 255 | |
| Ser Lys Ala Ser Leu Cys Val Ser Ser | 260 | Phe Phe Ala Ile Ser Trp | 265 | 270 | |
| Ala Leu Leu Pro Leu Ser Pro Tyr Leu Met Leu Lys | 275 | | 280 | | |

<210> 292
 <211> 1484
 <212> DNA
 <213> Homo sapiens

<400> 292
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<210> 293
 <211> 180
 <212> PRT
 <213> Homo sapiens

<400> 293
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 20 25 30
 Gly Leu Gln Arg Val His Glu Pro Thr Trp Ala Gln Gln Leu Leu
 35 40 45
 Gln Glu Met Lys Thr Leu Phe Leu Asn Thr Glu Tyr Leu Met Pro
 50 55 60
 Phe Leu Leu Asn Gln Cys Gly Ser Leu Leu Tyr Tyr Leu Thr Leu
 65 70 75
 Ala Ser Thr Asp Leu Thr Leu Ala Val Pro Ile Cys Asn Ser Leu
 80 85 90
 Ala Ile Ile Phe Thr Leu Ile Val Gly Lys Ala Leu Gly Glu Asp
 95 100 105
 Ile Gly Gly Lys Arg Lys Leu Asp Tyr Cys Glu Cys Gly Thr Gln
 110 115 120
 Leu Cys Gly Ser Arg His Thr Cys Val Ser Ser Phe Pro Glu Pro
 125 130 135
 Ile Ser Pro Glu Trp Val Arg Thr Arg Pro Phe Pro Ile Leu Pro
 140 145 150

Phe Pro Leu Gln Leu Phe Cys Phe Leu Val Ala Ile Arg Val Pro
155 160 165

Phe Pro Trp Thr Val Trp Arg Lys Thr Glu Ala Gly Val Trp Asp
170 175 180

<210> 294

<211> 1164

<212> DNA

<213> Homo sapiens

<400> 294

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<210> 295

<211> 237

<212> PRT

<213> Homo sapiens

<400> 295

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Ala Val Glu Ser Leu Ser Cys Val Gln Cys Asn Ser Trp Glu Lys
 20          25          30

Ser Cys Val Asn Ser Ile Ala Ser Glu Cys Pro Ser His Ala Asn
 35          40          45

Thr Ser Cys Ile Ser Ser Ser Ala Ser Ser Ser Leu Glu Thr Pro
 50          55          60

Val Arg Leu Tyr Gln Asn Met Phe Cys Ser Ala Glu Asn Cys Ser
 65          70          75

Glu Glu Thr His Ile Thr Ala Phe Thr Val His Val Ser Ala Glu
 80          85          90

Glu His Phe His Phe Val Ser Gln Cys Cys Gln Gly Lys Glu Cys
 95          100          105

Ser Asn Thr Ser Asp Ala Leu Asp Pro Pro Leu Lys Asn Val Ser
 110          115          120

Ser Asn Ala Glu Cys Pro Ala Cys Tyr Glu Ser Asn Gly Thr Ser
 125          130          135

Cys Arg Gly Lys Pro Trp Lys Cys Tyr Glu Glu Glu Gln Cys Val
 140          145          150

Phe Leu Val Ala Glu Leu Lys Asn Asp Ile Glu Ser Lys Ser Leu
 155          160          165

Val Leu Lys Gly Cys Ser Asn Val Ser Asn Ala Thr Cys Gln Phe
 170          175          180

Leu Ser Gly Glu Asn Lys Thr Leu Gly Gly Val Ile Phe Arg Lys
 185          190          195

Phe Glu Cys Ala Asn Val Asn Ser Leu Thr Pro Thr Ser Ala Pro
 200          205          210

Thr Thr Ser His Asn Val Gly Ser Lys Ala Ser Leu Tyr Leu Leu
 215          220          225

Ala Leu Ala Ser Leu Leu Leu Arg Gly Leu Leu Pro
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<210> 296

<211> 1245

<212> DNA

<213> Homo sapiens

<400> 296

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ccagcccat ggtccccgcc gccggcgccg tgctgtgggt cctgctgctg 150
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<210> 297

<211> 341

<212> PRT

<213> Homo sapiens

<400> 297

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Val | Pro | Ala | Ala | Gly | Ala | Leu | Leu | Trp | Val | Leu | Leu | Leu | Asn |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Pro | Arg | Ala | Ala | Gly | Ala | Gln | Gly | Leu | Thr | Gln | Thr | Pro |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Glu | Met | Gln | Arg | Val | Ser | Leu | Arg | Phe | Gly | Gly | Pro | Met | Thr |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Ser | Tyr | Arg | Ser | Thr | Ala | Arg | Thr | Gly | Leu | Pro | Arg | Lys | Thr |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Arg | Ile | Ile | Leu | Glu | Asp | Glu | Asn | Asp | Ala | Met | Ala | Asp | Ala | Asp |

| | 65 | 70 | 75 |
|-----------------|-----------------|-----------------|-------------|
| Arg Leu Ala Gly | Pro Ala Ala Ala | Glu Leu Leu Ala | Thr Val |
| | 80 | 85 | 90 |
| Ser Thr Gly Phe | Ser Arg Ser Ser | Ala Ile Asn Glu | Glu Asp Gly |
| | 95 | 100 | 105 |
| Ser Ser Glu Glu | Gly Val Val Ile | Asn Ala Gly Lys | Asp Ser Thr |
| | 110 | 115 | 120 |
| Ser Arg Glu Leu | Pro Ser Ala Thr | Pro Asn Thr Ala | Gly Ser Ser |
| | 125 | 130 | 135 |
| Ser Thr Arg Phe | Ile Ala Asn Ser | Gln Glu Pro Glu | Ile Arg Leu |
| | 140 | 145 | 150 |
| Thr Ser Ser Leu | Pro Arg Ser Pro | Gly Arg Ser Thr | Glu Asp Leu |
| | 155 | 160 | 165 |
| Pro Gly Ser Gln | Ala Thr Leu Ser | Gln Trp Ser Thr | Pro Gly Ser |
| | 170 | 175 | 180 |
| Thr Pro Ser Arg | Trp Pro Ser Pro | Ser Pro Thr Ala | Met Pro Ser |
| | 185 | 190 | 195 |
| Pro Glu Asp Leu | Arg Leu Val Leu | Met Pro Trp Gly | Pro Trp His |
| | 200 | 205 | 210 |
| Cys His Cys Lys | Ser Gly Thr Met | Ser Arg Ser Arg | Ser Gly Lys |
| | 215 | 220 | 225 |
| Leu His Gly Leu | Ser Gly Arg Leu | Arg Val Gly Ala | Leu Ser Gln |
| | 230 | 235 | 240 |
| Leu Arg Thr Glu | His Lys Pro Cys | Thr Tyr Gln Gln | Cys Pro Cys |
| | 245 | 250 | 255 |
| Asn Arg Leu Arg | Glu Glu Cys Pro | Leu Asp Thr Ser | Leu Cys Thr |
| | 260 | 265 | 270 |
| Asp Thr Asn Cys | Ala Ser Gln Ser | Thr Thr Ser Thr | Arg Thr Thr |
| | 275 | 280 | 285 |
| Thr Thr Pro Phe | Pro Thr Ile His | Leu Arg Ser Ser | Pro Ser Leu |
| | 290 | 295 | 300 |
| Pro Pro Ala Ser | Pro Cys Pro Ala | Leu Ala Phe Trp | Lys Arg Val |
| | 305 | 310 | 315 |
| Arg Ile Gly Leu | Glu Asp Ile Trp | Asn Ser Leu Ser | Ser Val Phe |
| | 320 | 325 | 330 |
| Thr Glu Met Gln | Pro Ile Asp Arg | Asn Gln Arg | |
| | 335 | 340 | |

<210> 298

<211> 2692

<212> DNA

<213> Homo sapiens

<400> 298

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<210> 299
 <211> 320
 <212> PRT
 <213> Homo sapiens

<400> 299
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 35 40 45
 Leu Asn His Phe Arg Ser Arg Gln Pro Ile Tyr Met Ser Leu Ala
 50 55 60
 Gly Trp Thr Cys Arg Asp Asp Cys Lys Tyr Glu Cys Met Trp Val
 65 70 75

Thr Val Gly Leu Tyr Leu Gln Glu Gly His Lys Val Pro Gln Phe
 80 85 90
 His Gly Lys Trp Pro Phe Ser Arg Phe Leu Phe Phe Gln Glu Pro
 95 100 105
 Ala Ser Ala Val Ala Ser Phe Leu Asn Gly Leu Ala Ser Leu Val
 110 115 120
 Met Leu Cys Arg Tyr Arg Thr Phe Val Pro Ala Ser Ser Pro Met
 125 130 135
 Tyr His Thr Cys Val Ala Phe Ala Trp Val Ser Leu Asn Ala Trp
 140 145 150
 Phe Trp Ser Thr Val Phe His Thr Arg Asp Thr Asp Leu Thr Glu
 155 160 165
 Lys Met Asp Tyr Phe Cys Ala Ser Thr Val Ile Leu His Ser Ile
 170 175 180
 Tyr Leu Cys Cys Val Arg Thr Val Gly Leu Gln His Pro Ala Val
 185 190 195
 Val Ser Ala Phe Arg Ala Leu Leu Leu Leu Met Leu Thr Val His
 200 205 210
 Val Ser Tyr Leu Ser Leu Ile Arg Phe Asp Tyr Gly Tyr Asn Leu
 215 220 225
 Val Ala Asn Val Ala Ile Gly Leu Val Asn Val Val Trp Trp Leu
 230 235 240
 Ala Trp Cys Leu Trp Asn Gln Arg Arg Leu Pro His Val Arg Lys
 245 250 255
 Cys Val Val Val Val Leu Leu Leu Gln Gly Leu Ser Leu Leu Glu
 260 265 270
 Leu Leu Asp Phe Pro Pro Leu Phe Trp Val Leu Asp Ala His Ala
 275 280 285
 Ile Trp His Ile Ser Thr Ile Pro Val His Val Leu Phe Phe Ser
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 Phe Leu Glu Asp Asp Ser Leu Tyr Leu Leu Lys Glu Ser Glu Asp
 305 310 315
 Lys Phe Lys Leu Asp
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<210> 300

<211> 1674

<212> DNA

<213> Homo sapiens

<400> 300

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<210> 301

<211> 461
 <212> PRT
 <213> Homo sapiens

<400> 301

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Met | Ala | Pro | Gln | Ser | Leu | Pro | Ser | Ser | Arg | Met | Ala | Pro | Leu | Gly | |
| 1 | | | | 5 | | | | | 10 | | | | | 15 | |
| Met | Leu | Leu | Gly | Leu | Leu | Met | Ala | Ala | Cys | Phe | Thr | Phe | Cys | Leu | |
| | | | 20 | | | | | | 25 | | | | | 30 | |
| Ser | His | Gln | Asn | Leu | Lys | Glu | Phe | Ala | Leu | Thr | Asn | Pro | Glu | Lys | |
| | | | 35 | | | | | | 40 | | | | | 45 | |
| Ser | Ser | Thr | Lys | Glu | Thr | Glu | Arg | Lys | Glu | Thr | Lys | Ala | Glu | Glu | |
| | | | 50 | | | | | | 55 | | | | | 60 | |
| Glu | Leu | Asp | Ala | Glu | Val | Leu | Glu | Val | Phe | His | Pro | Thr | His | Glu | |
| | | | 65 | | | | | | 70 | | | | | 75 | |
| Trp | Gln | Ala | Leu | Gln | Pro | Gly | Gln | Ala | Val | Pro | Ala | Gly | Ser | His | |
| | | | 80 | | | | | | 85 | | | | | 90 | |
| Val | Arg | Leu | Asn | Leu | Gln | Thr | Gly | Glu | Arg | Glu | Ala | Lys | Leu | Gln | |
| | | | 95 | | | | | | 100 | | | | | 105 | |
| Tyr | Glu | Asp | Lys | Phe | Arg | Asn | Asn | Leu | Lys | Gly | Lys | Arg | Leu | Asp | |
| | | | 110 | | | | | | 115 | | | | | 120 | |
| Ile | Asn | Thr | Asn | Thr | Tyr | Thr | Ser | Gln | Asp | Leu | Lys | Ser | Ala | Leu | |
| | | | 125 | | | | | | 130 | | | | | 135 | |
| Ala | Lys | Phe | Lys | Glu | Gly | Ala | Glu | Met | Glu | Ser | Ser | Lys | Glu | Asp | |
| | | | 140 | | | | | | 145 | | | | | 150 | |
| Lys | Ala | Arg | Gln | Ala | Glu | Val | Lys | Arg | Leu | Phe | Arg | Pro | Ile | Glu | |
| | | | 155 | | | | | | 160 | | | | | 165 | |
| Glu | Leu | Lys | Lys | Asp | Phe | Asp | Glu | Leu | Asn | Val | Val | Ile | Glu | Thr | |
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| Asp | Met | Gln | Ile | Met | Val | Arg | Leu | Ile | Asn | Lys | Phe | Asn | Ser | Ser | |
| | | | 185 | | | | | | 190 | | | | | 195 | |
| Ser | Ser | Ser | Leu | Glu | Glu | Lys | Ile | Ala | Ala | Leu | Phe | Asp | Leu | Glu | |
| | | | 200 | | | | | | 205 | | | | | 210 | |
| Tyr | Tyr | Val | His | Gln | Met | Asp | Asn | Ala | Gln | Asp | Leu | Leu | Ser | Phe | |
| | | | 215 | | | | | | 220 | | | | | 225 | |
| Gly | Gly | Leu | Gln | Val | Val | Ile | Asn | Gly | Leu | Asn | Ser | Thr | Glu | Pro | |
| | | | 230 | | | | | | 235 | | | | | 240 | |
| Leu | Val | Lys | Glu | Tyr | Ala | Ala | Phe | Val | Leu | Gly | Ala | Ala | Phe | Ser | |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Ser | Asn | Pro | Lys | Val | Gln | Val | Glu | Ala | Ile | Glu | Gly | Gly | Ala | Leu | |
| | | | 260 | | | | | | 265 | | | | | 270 | |
| Gln | Lys | Leu | Leu | Val | Ile | Leu | Ala | Thr | Glu | Gln | Pro | Leu | Thr | Ala | |
| | | | 275 | | | | | | 280 | | | | | 285 | |
| Lys | Lys | Lys | Val | Leu | Phe | Ala | Leu | Cys | Ser | Leu | Leu | Arg | His | Phe | |

| | | |
|-------------------------------------|---------------------|-----|
| 290 | 295 | 300 |
| Pro Tyr Ala Gln Arg Gln Phe Leu Lys | Leu Gly Gly Leu Gln | Val |
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| Leu Arg Thr Leu Val Gln Glu Lys Gly | Thr Glu Val Leu Ala | Val |
| 320 | 325 | 330 |
| Arg Val Val Thr Leu Leu Tyr Asp Leu | Val Thr Glu Lys Met | Phe |
| 335 | 340 | 345 |
| Ala Glu Glu Glu Ala Glu Leu Thr Gln | Glu Met Ser Pro Glu | Lys |
| 350 | 355 | 360 |
| Leu Gln Gln Tyr Arg Gln Val His Leu | Leu Pro Gly Leu Trp | Glu |
| 365 | 370 | 375 |
| Gln Gly Trp Cys Gln Ile Thr Ala His | Leu Leu Ala Leu Pro | Glu |
| 380 | 385 | 390 |
| His Asp Ala Arg Glu Lys Val Leu Gln | Thr Leu Gly Val Leu | Leu |
| 395 | 400 | 405 |
| Thr Thr Cys Arg Arg Tyr Arg Gln Asp | Pro Gln Leu Gly | Arg |
| 410 | 415 | 420 |
| Thr Leu Ala Ser Leu Gln Ala Glu Tyr | Gln Val Leu Ala Ser | Leu |
| 425 | 430 | 435 |
| Glu Leu Gln Asp Glu Glu Asp Glu Gly | Tyr Phe Gln Glu Leu | Leu |
| 440 | 445 | 450 |
| Gly Ser Val Asn Ser Leu Leu Lys Glu | Leu Arg | |
| 455 | 460 | |

<210> 302

<211> 2136

<212> DNA

<213> Homo sapiens

<400> 302

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<210> 303
 <211> 247
 <212> PRT
 <213> Homo sapiens

<400> 303

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Gly | Ala | Ala | Val | Phe | Phe | Gly | Cys | Thr | Phe | Val | Ala | Phe | Gly | 15 |
| 1 | | | | 5 | | | | | 10 | | | | | | |
| Pro | Ala | Phe | Ala | Leu | Phe | Leu | Ile | Thr | Val | Ala | Gly | Asp | Pro | Leu | 30 |
| | | | | 20 | | | | | 25 | | | | | | |
| Arg | Val | Ile | Ile | Leu | Val | Ala | Gly | Ala | Phe | Phe | Trp | Leu | Val | Ser | 45 |
| | | | | 35 | | | | | 40 | | | | | | |
| Leu | Leu | Leu | Ala | Ser | Val | Val | Trp | Phe | Ile | Leu | Val | His | Val | Thr | 60 |
| | | | | 50 | | | | | 55 | | | | | | |
| Asp | Arg | Ser | Asp | Ala | Arg | Leu | Gln | Tyr | Gly | Leu | Leu | Ile | Phe | Gly | 75 |
| | | | | 65 | | | | | 70 | | | | | | |
| Ala | Ala | Val | Ser | Val | Leu | Leu | Gln | Glu | Val | Phe | Arg | Phe | Ala | Tyr | 90 |
| | | | | 80 | | | | | 85 | | | | | | |
| Tyr | Lys | Leu | Leu | Lys | Lys | Ala | Asp | Glu | Gly | Leu | Ala | Ser | Leu | Ser | 105 |
| | | | | 95 | | | | | 100 | | | | | | |
| Glu | Asp | Gly | Arg | Ser | Pro | Ile | Ser | Ile | Arg | Gln | Met | Ala | Tyr | Val | 120 |
| | | | | 110 | | | | | 115 | | | | | | |
| Ser | Gly | Leu | Ser | Phe | Gly | Ile | Ile | Ser | Gly | Val | Phe | Ser | Val | Ile | 135 |
| | | | | 125 | | | | | 130 | | | | | | |
| Asn | Ile | Leu | Ala | Asp | Ala | Leu | Gly | Pro | Gly | Val | Val | Gly | Ile | His | 150 |
| | | | | 140 | | | | | 145 | | | | | | |
| Gly | Asp | Ser | Pro | Tyr | Tyr | Phe | Leu | Thr | Ser | Ala | Phe | Leu | Thr | Ala | 165 |
| | | | | 155 | | | | | 160 | | | | | | |
| Ala | Ile | Ile | Leu | Leu | His | Thr | Phe | Trp | Gly | Val | Val | Phe | Phe | Asp | 180 |
| | | | | 170 | | | | | 175 | | | | | | |
| Ala | Cys | Glu | Arg | Arg | Arg | Tyr | Trp | Ala | Leu | Gly | Leu | Val | Val | Gly | 195 |
| | | | | 185 | | | | | 190 | | | | | | |
| Ser | His | Leu | Leu | Thr | Ser | Gly | Leu | Thr | Phe | Leu | Asn | Pro | Trp | Tyr | 210 |
| | | | | 200 | | | | | 205 | | | | | | |
| Glu | Ala | Ser | Leu | Leu | Pro | Ile | Tyr | Ala | Val | Thr | Val | Ser | Met | Gly | 225 |
| | | | | 215 | | | | | 220 | | | | | | |
| Leu | Trp | Ala | Phe | Ile | Thr | Ala | Gly | Gly | Ser | Leu | Arg | Ser | Ile | Gln | 240 |
| | | | | 230 | | | | | 235 | | | | | | |
| Arg | Ser | Leu | Leu | Cys | Lys | Asp | | | | | | | | | 245 |

<210> 304
 <211> 240
 <212> DNA
 <213> Homo sapiens

<220>

<221> unsure
<222> 108, 123, 126, 154, 198, 206, 217
<223> unknown base

<400> 304
aagctggttt aaggaagcag aggaggggta gattcgttga gtgaggacgg 50
aagatcaacc catttcatt ccgccagatg gcctatgttt ctggtctctc 100
ccttcggnat catcagtggt gtntntctg ttatcaatat ttggctgat 150
gcanttgggc caggtgtggt tgggatccat ggagactcac cctattant 200
cotganttca gccttntga cagcagccat taccctgctc 240

<210> 305
<211> 378
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 58, 94, 132, 186, 191, 220, 240, 248, 280, 311, 332
<223> unknown base

<400> 305
gaccgaccgt tcagatgcc ggttcagta cggcttctgt atttttgggt 50
ctgctgtntc tgccttcta caggagtggt tccgctttgc ctantacaag 100
ctgcttaaga aggacagatga ggggttagca tngctgagtg aggacggaag 150
atcacccatt tccatccgcc agatggccta tgttnttggt ntttccttcg 200
gtatcatcag tgggtgtttn tctgttatca atattttggn tgatgcantt 250
gggcagcagtg tgggtgggat ccatggagan tcacctatt aattcctgaa 300
ttcagccttt ntgcagcag ccattatcct gntccatacc ttttggggag 350
ttgtgttttt tgatgcctgt gagaggag 378

<210> 306
<211> 655
<212> DNA
<213> Homo sapiens

<220>
<221> unsure
<222> 1, 22, 129, 133, 184
<223> unknown base

<400> 306
ngttggagaa gtggcgcgga cnttcatttg gggtttcggt ttccccctt 50
tccctttccc cgggtctctg ggtgacattg caagggccccc tcgtggggtc 100
gogttgccac cccacgcgga ctccccagnt gngcgccct tccattttgc 150
ctgtcctggt caggccccca ccccccttcc cacntgacca gccatggggg 200
ctgcggtgtt ttccggtctg acttctctcg cgttcggccc ggccttcgctg 250

cttttcttga tcaactgtggc tggggaccog ctctcggtta tcatcctggt 300
 cgcaggggca tttttctggc tgggtctccct gctcctggcc tctgtgtct 350
 gggtcatctt ggtccatgtg accgaccggt cagatgccc gctccagtac 400
 ggctctctga tttttgggtc tgctgtctct gtcctctac aggaggtgtt 450
 ccgctttgcc tactacaagc tgcttaagaa ggcagatgag ggttagcat 500
 cgctgagtga ggacggaaga taccctatct ccatccgcca gatggcctat 550
 gtttctggtc tctccttcgg tatcatcagt ggtgtctct ctgttatcaa 600
 tattttggct gatgcacttg ggccagggtg ggttgggatc catggagact 650
 cacc 655

<210> 307
 <211> 650
 <212> DNA
 <213> Homo sapiens

<220>
 <221> unsure
 <222> 52, 89, 128
 <223> unknown base

<400> 307
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 cnttccocgg ggtctggggg tgacattgca ccgcgccnt cgtggggtcg 100
 cgttgccacc ccacgcggac tocccagntg gcgcgccct cccatttgcc 150
 tgtctgggtc aggcccccac ccccttccc acctgaccag ccatgggggc 200
 tgccgtgttt ttccggctgc actttcgtcg cgttcgggcc cggccttcgc 250
 gcttttcttg atcaactgtg ctggggaccc gtttcggtt atcatcctgg 300
 tcgcaggggc atttttcttg ctggtctccc tgcctcggc ctctgtggtc 350
 tggttcatct tgggtcatgt gaccgacogc tcagatgccc ggctccagta 400
 cggcctcctg atttttgggt ctgctgtctc tgccttcta caggaggtgt 450
 tccgctttgc ctactacaag ctgcttaaga aggcagatga ggggttagca 500
 tcgctgagtg aggaoggaag atcaccatc tccatccgc agatggccta 550
 tgtttctggt ctctccttcg gtatcatcag tgggtctctc tctgttatca 600
 atattttggc tgatgcactt ggccagggtg tggttgggat ccatggagac 650

<210> 308
 <211> 1570
 <212> DNA
 <213> Homo sapiens

<400> 308
 gcccagga gcagtggtg gttataactc aggcccggtg cccagagccc 50

<211> 293
 <212> PRT
 <213> Homo sapiens

<400> 309

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Ala | Thr | Ala | Arg | Pro | Pro | Trp | Met | Trp | Val | Leu | Cys | Ala | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Ile | Thr | Ala | Leu | Leu | Leu | Gly | Val | Thr | Glu | His | Val | Leu | Ala | Asn |
| | | | 20 | | | | | | 25 | | | | | 30 |
| Asn | Asp | Val | Ser | Cys | Asp | His | Pro | Ser | Asn | Thr | Val | Pro | Ser | Gly |
| | | | 35 | | | | | | 40 | | | | | 45 |
| Ser | Asn | Gln | Asp | Leu | Gly | Ala | Gly | Ala | Gly | Glu | Asp | Ala | Arg | Ser |
| | | | 50 | | | | | | 55 | | | | | 60 |
| Asp | Asp | Ser | Ser | Ser | Arg | Ile | Ile | Asn | Gly | Ser | Asp | Cys | Asp | Met |
| | | | 65 | | | | | | 70 | | | | | 75 |
| His | Thr | Gln | Pro | Trp | Gln | Ala | Ala | Leu | Leu | Leu | Arg | Pro | Asn | Gln |
| | | | 80 | | | | | | 85 | | | | | 90 |
| Leu | Tyr | Cys | Gly | Ala | Val | Leu | Val | His | Pro | Gln | Trp | Leu | Leu | Thr |
| | | | 95 | | | | | | 100 | | | | | 105 |
| Ala | Ala | His | Cys | Arg | Lys | Lys | Val | Phe | Arg | Val | Arg | Leu | Gly | His |
| | | | 110 | | | | | | 115 | | | | | 120 |
| Tyr | Ser | Leu | Ser | Pro | Val | Tyr | Glu | Ser | Gly | Gln | Gln | Met | Phe | Gln |
| | | | 125 | | | | | | 130 | | | | | 135 |
| Gly | Val | Lys | Ser | Ile | Pro | His | Pro | Gly | Tyr | Ser | His | Pro | Gly | His |
| | | | 140 | | | | | | 145 | | | | | 150 |
| Ser | Asn | Asp | Leu | Met | Leu | Ile | Lys | Leu | Asn | Arg | Arg | Ile | Arg | Pro |
| | | | 155 | | | | | | 160 | | | | | 165 |
| Thr | Lys | Asp | Val | Arg | Pro | Ile | Asn | Val | Ser | Ser | His | Cys | Pro | Ser |
| | | | 170 | | | | | | 175 | | | | | 180 |
| Ala | Gly | Thr | Lys | Cys | Leu | Val | Ser | Gly | Trp | Gly | Thr | Thr | Lys | Ser |
| | | | 185 | | | | | | 190 | | | | | 195 |
| Pro | Gln | Val | His | Phe | Pro | Lys | Val | Leu | Gln | Cys | Leu | Asn | Ile | Ser |
| | | | 200 | | | | | | 205 | | | | | 210 |
| Val | Leu | Ser | Gln | Lys | Arg | Cys | Glu | Asp | Ala | Tyr | Pro | Arg | Gln | Ile |
| | | | 215 | | | | | | 220 | | | | | 225 |
| Asp | Asp | Thr | Met | Phe | Cys | Ala | Gly | Asp | Lys | Ala | Gly | Arg | Asp | Ser |
| | | | 230 | | | | | | 235 | | | | | 240 |
| Cys | Gln | Gly | Asp | Ser | Gly | Gly | Pro | Val | Val | Cys | Asn | Gly | Ser | Leu |
| | | | 245 | | | | | | 250 | | | | | 255 |
| Gln | Gly | Leu | Val | Ser | Trp | Gly | Asp | Tyr | Pro | Cys | Ala | Arg | Pro | Asn |
| | | | 260 | | | | | | 265 | | | | | 270 |
| Arg | Pro | Gly | Val | Tyr | Thr | Asn | Leu | Cys | Lys | Phe | Thr | Lys | Trp | Ile |
| | | | 275 | | | | | | 280 | | | | | 285 |
| Gln | Glu | Thr | Ile | Gln | Ala | Asn | Ser | | | | | | | |

<210> 310
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 310
 tcctgtgacc acccctctaa cacc 24

<210> 311
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 311
 ctggaacatc tgctgcccag attc 24

<210> 312
 <211> 50
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 312
 gtcggatgac agcagcagcc gcatacatcaa tggatccgac tgcgatatgc 50

<210> 313
 <211> 3010
 <212> DNA
 <213> Homo sapiens

<400> 313
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 ccggccgcgc gacaagcgc agcggccgag ctgcggctac gtgctgtgca 100
 ccgtgctgct ggccctggct gtgctgctgg ctgtagctgt caccggtgcc 150
 gtgctcttcc tgaaccacgc ccacgcgccg ggcacggcgc cccacctgt 200
 cgtcagcact ggggctgcc a gcaccaacag cgccttggtc actgtggaaa 250
 gggcgagacg ctgcacctc agcatacctca ttgaccgcg ctgccccgac 300
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 ggcgctgaca gagcaccagg ccagccacg gctggtgggc gaccaggagc 400
 aggagctgct ggacaogctg gccgaccagc tgccccggct gctggccgca 450
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 gctggggcag ggctcagcg cctgcagag tgagcagggc cgcctcatcc 550

| | | | |
|---|-----|-----|-----|
| Ala Arg Leu Glu Ser Ala Gln Ala Ser Val Leu Gln Ala Leu Thr | 110 | 115 | 120 |
| Glu His Gln Ala Gln Pro Arg Leu Val Gly Asp Gln Glu Gln Glu | 125 | 130 | 135 |
| Leu Leu Asp Thr Leu Ala Asp Gln Leu Pro Arg Leu Leu Ala Arg | 140 | 145 | 150 |
| Ala Ser Glu Leu Gln Thr Glu Cys Met Gly Leu Arg Lys Gly His | 155 | 160 | 165 |
| Gly Thr Leu Gly Gln Gly Leu Ser Ala Leu Gln Ser Glu Gln Gly | 170 | 175 | 180 |
| Arg Leu Ile Gln Leu Leu Ser Glu Ser Gln Gly His Met Ala His | 185 | 190 | 195 |
| Leu Val Asn Ser Val Ser Asp Ile Leu Asp Ala Leu Gln Arg Asp | 200 | 205 | 210 |
| Arg Gly Leu Gly Arg Pro Arg Asn Lys Ala Asp Leu Gln Arg Ala | 215 | 220 | 225 |
| Pro Ala Arg Gly Thr Arg Pro Arg Gly Cys Ala Thr Gly Ser Arg | 230 | 235 | 240 |
| Pro Arg Asp Cys Leu Asp Val Leu Leu Ser Gly Gln Gln Asp Asp | 245 | 250 | 255 |
| Gly Val Tyr Ser Val Phe Pro Thr His Tyr Pro Ala Gly Phe Gln | 260 | 265 | 270 |
| Val Tyr Cys Asp Met Arg Thr Asp Gly Gly Gly Trp Thr Val Phe | 275 | 280 | 285 |
| Gln Arg Arg Glu Asp Gly Ser Val Asn Phe Phe Arg Gly Trp Asp | 290 | 295 | 300 |
| Ala Tyr Arg Asp Gly Phe Gly Arg Leu Thr Gly Glu His Trp Leu | 305 | 310 | 315 |
| Gly Leu Lys Arg Ile His Ala Leu Thr Thr Gln Ala Ala Tyr Glu | 320 | 325 | 330 |
| Leu His Val Asp Leu Glu Asp Phe Glu Asn Gly Thr Ala Tyr Ala | 335 | 340 | 345 |
| Arg Tyr Gly Ser Phe Gly Val Gly Leu Phe Ser Val Asp Pro Glu | 350 | 355 | 360 |
| Glu Asp Gly Tyr Pro Leu Thr Val Ala Asp Tyr Ser Gly Thr Ala | 365 | 370 | 375 |
| Gly Asp Ser Leu Leu Lys His Ser Gly Met Arg Phe Thr Thr Lys | 380 | 385 | 390 |
| Asp Arg Asp Ser Asp His Ser Glu Asn Asn Cys Ala Ala Phe Tyr | 395 | 400 | 405 |
| Arg Gly Ala Trp Trp Tyr Arg Asn Cys His Thr Ser Asn Leu Asn | 410 | 415 | 420 |

Gly Gln Tyr Leu Arg Gly Ala His Ala Ser Tyr Ala Asp Gly Val
 425 430 435
 Glu Trp Ser Ser Trp Thr Gly Trp Gln Tyr Ser Leu Lys Phe Ser
 440 445 450
 Glu Met Lys Ile Arg Pro Val Arg Glu Asp Arg
 455 460

<210> 315
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 315
 cacacgtcca acctcaatgg gcag 24

<210> 316
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 316
 gaccagcagg gccaaggaca agg 23

<210> 317
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 317
 gttctctgag atgaagatcc ggcgggtccg ggagtaccgc ttag 44

<210> 318
 <211> 1841
 <212> DNA
 <213> Homo sapiens

<400> 318
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 ccaagtacag cagcaccagg gacatgctgg atgatgatgg ggacaccacc 200
 atgagcctgc attctcaagc ctctgccaca actcggcatc cagagccccg 250
 gcgcacagag cacagggtc cctcttcaac gtggcgacca gtggccctga 300
 ccctgctgac tttgtgcttg gtgctgctga tagggctggc agccctgggg 350
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 gagagattaa agaccagaaa aaagtgcgc tcttcatctg caactgtaat 1750
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 aotgaagatt taataataat aaatgtaaat actgtgaaa a 1841

<210> 319
 <211> 280
 <212> PRT
 <213> Homo sapiens

<400> 319

Met Gln Ala Lys Tyr Ser Ser Thr Arg Asp Met Leu Asp Asp Asp
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Gly Asp Thr Thr Met Ser Leu His Ser Gln Ala Ser Ala Thr Thr
20 25 30

Arg His Pro Glu Pro Arg Arg Thr Glu His Arg Ala Pro Ser Ser
35 40 45

Thr Trp Arg Pro Val Ala Leu Thr Leu Leu Thr Leu Cys Leu Val
50 55 60

Leu Leu Ile Gly Leu Ala Ala Leu Gly Leu Leu Phe Phe Gln Tyr
65 70 75

Tyr Gln Leu Ser Asn Thr Gly Gln Asp Thr Ile Ser Gln Met Glu
80 85 90

Glu Arg Leu Gly Asn Thr Ser Gln Glu Leu Gln Ser Leu Gln Val
95 100 105

Gln Asn Ile Lys Leu Ala Gly Ser Leu Gln His Val Ala Glu Lys
110 115 120

Leu Cys Arg Glu Leu Tyr Asn Lys Ala Gly Ala His Arg Cys Ser
125 130 135

Pro Cys Thr Glu Gln Trp Lys Trp His Gly Asp Asn Cys Tyr Gln
140 145 150

Phe Tyr Lys Asp Ser Lys Ser Trp Glu Asp Cys Lys Tyr Phe Cys
155 160 165

Leu Ser Glu Asn Ser Thr Met Leu Lys Ile Asn Lys Gln Glu Asp
170 175 180

Leu Glu Phe Ala Ala Ser Gln Ser Tyr Ser Glu Phe Phe Tyr Ser
185 190 195

Tyr Trp Thr Gly Leu Leu Arg Pro Asp Ser Gly Lys Ala Trp Leu
200 205 210

Trp Met Asp Gly Thr Pro Phe Thr Ser Glu Leu Phe His Ile Ile
215 220 225

Ile Asp Val Thr Ser Pro Arg Ser Arg Asp Cys Val Ala Ile Leu
230 235 240

Asn Gly Met Ile Phe Ser Lys Asp Cys Lys Glu Leu Lys Arg Cys
245 250 255

Val Cys Glu Arg Arg Ala Gly Met Val Lys Pro Glu Ser Leu His
260 265 270

Val Pro Pro Glu Thr Leu Gly Glu Gly Asp
275 280

<210> 320

<211> 468

<212> DNA

<213> Homo sapiens

<220>
 <221> unsure
 <222> 59, 95, 149, 331, 364, 438, 446
 <223> unknown base

<400> 320
 aattttcacc gctgtaggaa tccagatgca ggccaagtac agcagcacga 50
 gggacatgnt ggtgatgat gggacaccac catgagcctg cattntcaag 100
 cttttgccac aattggcat ccagagcccc ggcgcacaga gcacagggnt 150
 cctttttcaa cgtggcgacc agtggccctg accctgctga ctttgtgctt 200
 ggtgctgctg atagggtgg cagccctggg gcttttgctt ttccagtact 250
 accagctctc caatactggt caagacacca tttctcaaat ggaagaaaga 300
 ttaggaaata cgtccaaga gttgcaattt nttcaagtcc agaataataa 350
 gcttgacaga agtntgcagc atgtggctga aaaactctgt cgtgagctgt 400
 ataacaaaagc tggaggaact ttgaaggagg gcaaagtntc ctcatttact 450
 atacacacac cacttccc 468

<210> 321
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 321
 atgcaggcca agtacagcag cac 23

<210> 322
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 322
 catgctgacg acttctgca agc 23

<210> 323
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 323
 ccacacagtc tetgettttt ggg 23

<210> 324
 <211> 40
 <212> DNA
 <213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 324

atgctgcatg atgatgggga caccaccatg agcctgcatt 40

<210> 325

<211> 2988

<212> DNA

<213> Homo sapiens

<400> 325

gccgagcgca agaaccctgc gcagcccaga gcagctgctg gaggggaatc 50
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gagggagcgg gcccgccgcg ggggcccgag ccctccggat ccgccccctc 150
cccggtcccc cccctcggga gactectctg gctgctctgg gggttcggcg 200
gggcggggga cccgcggtcc gggcgccatg cgggcatcgc tctgctgtgc 250
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ccgccccaac ctgggagactc tgagctgccg ccgcgcgga acaccaacgc 400
ggcgcgccgg cccaactcgg tgcagcccgg agcggagcgc gagaagcccg 450
gggcggcgga aggcgcggg gagaattggg agccgcgcgt ctgcccctac 500
caccctgcac agcccgcca gcccgccaaa aaggccgtca ggaccgcta 550
catcagcacg gagctgggca tcaggcagag gctgctggtg gcggtgtgta 600
cctctcagac acgctgccc acgctgggcg tggccgtgaa ccgacgctg 650
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ggccccacct ggcatggcag tggtagcgtt gggcgaggag cgaccattg 750
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gatccagaat accagccatc tggccgttga tggggaccgg gcagctgctt 1350
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 gccgtagcca gacccaagc tggcccactg gtccccctc tggctctgtg 2700
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 gcctctgggc cctgggggct gggctgtaga agagttgttg gggaaggagg 2900

gagctgagga gggggcatct cccaacttct cccttttgga cctgcccga 2950
 gctccctgcc ttttaataaac tggccaagtg tggaaaaa 2988

<210> 326
 <211> 775
 <212> PRT
 <213> Homo sapiens

<400> 326
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 Val Ala Val Gly Ile Ser Leu Gly Phe Thr Leu Ser Leu Leu Ser
 20 25 30
 Val Thr Trp Val Glu Glu Pro Cys Gly Pro Gly Pro Pro Gln Pro
 35 40 45
 Gly Asp Ser Glu Leu Pro Pro Arg Gly Asn Thr Asn Ala Ala Arg
 50 55 60
 Arg Pro Asn Ser Val Gln Pro Gly Ala Glu Arg Glu Lys Pro Gly
 65 70 75
 Ala Gly Glu Gly Ala Gly Glu Asn Trp Glu Pro Arg Val Leu Pro
 80 85 90
 Tyr His Pro Ala Gln Pro Gly Gln Ala Ala Lys Lys Ala Val Arg
 95 100 105
 Thr Arg Tyr Ile Ser Thr Glu Leu Gly Ile Arg Gln Arg Leu Leu
 110 115 120
 Val Ala Val Leu Thr Ser Gln Thr Thr Pro Thr Leu Gly Val
 125 130 135
 Ala Val Asn Arg Thr Leu Gly His Arg Leu Glu Arg Val Val Phe
 140 145 150
 Leu Thr Gly Ala Arg Gly Arg Arg Ala Pro Pro Gly Met Ala Val
 155 160 165
 Val Thr Leu Gly Glu Glu Arg Pro Ile Gly His Leu His Leu Ala
 170 175 180
 Leu Arg His Leu Leu Glu Gln His Gly Asp Asp Phe Asp Trp Phe
 185 190 195
 Phe Leu Val Pro Asp Thr Thr Tyr Thr Glu Ala His Gly Leu Ala
 200 205 210
 Arg Leu Thr Gly His Leu Ser Leu Ala Ser Ala Ala His Leu Tyr
 215 220 225
 Leu Gly Arg Pro Gln Asp Phe Ile Gly Gly Glu Pro Thr Pro Gly
 230 235 240
 Arg Tyr Cys His Gly Gly Phe Gly Val Leu Leu Ser Arg Met Leu
 245 250 255
 Leu Gln Gln Leu Arg Pro His Leu Glu Gly Cys Arg Asn Asp Ile
 260 265 270

| | | | | |
|-----------------|---|-----|-----|-----|
| Val Ser Ala Arg | Pro Asp Glu Trp Leu Gly Arg Cys Ile Leu Asp | 275 | 280 | 285 |
| Ala Thr Gly Val | Gly Cys Thr Gly Asp His Glu Gly Val His Tyr | 290 | 295 | 300 |
| Ser His Leu Glu | Leu Ser Pro Gly Glu Pro Val Gln Glu Gly Asp | 305 | 310 | 315 |
| Pro His Phe Arg | Ser Ala Leu Thr Ala His Pro Val Arg Asp Pro | 320 | 325 | 330 |
| Val His Met Tyr | Gln Leu His Lys Ala Phe Ala Arg Ala Glu Leu | 335 | 340 | 345 |
| Glu Arg Thr Tyr | Gln Glu Ile Gln Glu Leu Gln Trp Glu Ile Gln | 350 | 355 | 360 |
| Asn Thr Ser His | Leu Ala Val Asp Gly Asp Arg Ala Ala Ala Trp | 365 | 370 | 375 |
| Pro Val Gly Ile | Pro Ala Pro Ser Arg Pro Ala Ser Arg Phe Glu | 380 | 385 | 390 |
| Val Leu Arg Trp | Asp Tyr Phe Thr Glu Gln His Ala Phe Ser Cys | 395 | 400 | 405 |
| Ala Asp Gly Ser | Pro Arg Cys Pro Leu Arg Gly Ala Asp Arg Ala | 410 | 415 | 420 |
| Asp Val Ala Asp | Val Leu Gly Thr Ala Leu Glu Glu Leu Asn Arg | 425 | 430 | 435 |
| Arg Tyr His Pro | Ala Leu Arg Leu Gln Lys Gln Gln Leu Val Asn | 440 | 445 | 450 |
| Gly Tyr Arg Arg | Phe Asp Pro Ala Arg Gly Met Glu Tyr Thr Leu | 455 | 460 | 465 |
| Asp Leu Gln Leu | Glu Ala Leu Thr Pro Gln Gly Gly Arg Arg Pro | 470 | 475 | 480 |
| Leu Thr Arg Arg | Val Gln Leu Leu Arg Pro Leu Ser Arg Val Glu | 485 | 490 | 495 |
| Ile Leu Pro Val | Pro Tyr Val Thr Glu Ala Ser Arg Leu Thr Val | 500 | 505 | 510 |
| Leu Leu Pro Leu | Ala Ala Ala Glu Arg Asp Leu Ala Pro Gly Phe | 515 | 520 | 525 |
| Leu Glu Ala Phe | Ala Thr Ala Ala Leu Glu Pro Gly Asp Ala Ala | 530 | 535 | 540 |
| Ala Ala Leu Thr | Leu Leu Leu Leu Tyr Glu Pro Arg Gln Ala Gln | 545 | 550 | 555 |
| Arg Val Ala His | Ala Asp Val Phe Ala Pro Val Lys Ala His Val | 560 | 565 | 570 |
| Ala Glu Leu Glu | Arg Arg Phe Pro Gly Ala Arg Val Pro Trp Leu | 575 | 580 | 585 |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ser | Val | Gln | Thr | Ala | Ala | Pro | Ser | Pro | Leu | Arg | Leu | Met | Asp | Leu |
| | | | | 590 | | | | | 595 | | | | | 600 |
| Leu | Ser | Lys | Lys | His | Pro | Leu | Asp | Thr | Leu | Phe | Leu | Leu | Ala | Gly |
| | | | | 605 | | | | | 610 | | | | | 615 |
| Pro | Asp | Thr | Val | Leu | Thr | Pro | Asp | Phe | Leu | Asn | Arg | Cys | Arg | Met |
| | | | | 620 | | | | | 625 | | | | | 630 |
| His | Ala | Ile | Ser | Gly | Trp | Gln | Ala | Phe | Phe | Pro | Met | His | Phe | Gln |
| | | | | 635 | | | | | 640 | | | | | 645 |
| Ala | Phe | His | Pro | Gly | Val | Ala | Pro | Pro | Gln | Gly | Pro | Gly | Pro | Pro |
| | | | | 650 | | | | | 655 | | | | | 660 |
| Glu | Leu | Gly | Arg | Asp | Thr | Gly | Arg | Phe | Asp | Arg | Gln | Ala | Ala | Ser |
| | | | | 665 | | | | | 670 | | | | | 675 |
| Glu | Ala | Cys | Phe | Tyr | Asn | Ser | Asp | Tyr | Val | Ala | Ala | Arg | Gly | Arg |
| | | | | 680 | | | | | 685 | | | | | 690 |
| Leu | Ala | Ala | Ala | Ser | Glu | Gln | Glu | Glu | Glu | Leu | Leu | Glu | Ser | Leu |
| | | | | 695 | | | | | 700 | | | | | 705 |
| Asp | Val | Tyr | Glu | Leu | Phe | Leu | His | Phe | Ser | Ser | Leu | His | Val | Leu |
| | | | | 710 | | | | | 715 | | | | | 720 |
| Arg | Ala | Val | Glu | Pro | Ala | Leu | Leu | Gln | Arg | Tyr | Arg | Ala | Gln | Thr |
| | | | | 725 | | | | | 730 | | | | | 735 |
| Cys | Ser | Ala | Arg | Leu | Ser | Glu | Asp | Leu | Tyr | His | Arg | Cys | Leu | Gln |
| | | | | 740 | | | | | 745 | | | | | 750 |
| Ser | Val | Leu | Glu | Gly | Leu | Gly | Ser | Arg | Thr | Gln | Leu | Ala | Met | Leu |
| | | | | 755 | | | | | 760 | | | | | 765 |
| Leu | Phe | Glu | Gln | Glu | Gln | Gly | Asn | Ser | Thr | | | | | |
| | | | | 770 | | | | | 775 | | | | | |

<210> 327

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 327

tggaaggctg ccgcaacgac aatc 24

<210> 328

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 328

ctgatgtggc cgatgttctg 20

<210> 329

<211> 20

<212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 329
 atggctcagt gtgcagacag 20

 <210> 330
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 330
 gcatgctgct ccgtgaagta gtcc 24

 <210> 331
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 331
 atgcatggga aagaaggcct gcc 24

 <210> 332
 <211> 47
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 332
 tgcactggtg accacgaggg ggtgcactat agccatctgg agctgag 47

 <210> 333
 <211> 1095
 <212> DNA
 <213> Homo sapiens

 <400> 333
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 gcctcctctg attggcaagc gctggccacc tccccacacc ccttgccaac 100
 gctcccctag tggagaaaag gagttagctat tagccaattc ggcaggggccc 150
 gctttttaga agcttgattt cctttgaaga tgaagacta gcggaagctc 200
 tgcctctttc ccagtgggc gagggaactc gggggcattg gctgggaact 250
 gtatccacc aaatgtcacc gatttcttc tatgcaggaa atgacgagac 300
 ccatcaataa gaaatttctc agcctggcgcg aaaatggttg gccccacgaa 350
 gccacgacaa ctggaggcaa agagggttgc tcaacgcccc gcctcattgg 400

aaaaccaa at cagatctggg acctatatag cgtggcggag gcggggcgat 450
 gattgtcgcg ctgcaccca ctgcagctgc gcacagtcgc atttctttcc 500
 ccgccccgta gacctgcag caccatctgt catggcggct gggctgtttg 550
 gtttgagcgc tcgcgctctt ttggcggcag cggcgacgag agggctccc 600
 gccgccccgc tccgctggga atctagcttc tccaggactg tggtcgcccc 650
 gtccgctgtg gccggaaagc ggcgcccgaga accgaccaca ccgtggcaag 700
 aggaccaga acccgaggac gaaaacttgt atgagaagaa cccagactcc 750
 catggttatg acaaggacct cgttttgac gtctggaaca tgcgacttgt 800
 cttcttcttt ggcgtctcca tcatctctgt ccttgccagc acccttgttg 850
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 ctgcttcgac ccagcaaga tccagctgcc agaggatgag tgaccagttg 1000
 ctaagtgggg ctcaagaagc accgccttcc ccacccctcg cctgccattc 1050
 tgacctcttc tcagagcacc taattaaagg ggctgaaagt ctgaa 1095

<210> 334
 <211> 153
 <212> PRT
 <213> Homo sapiens

<400> 334
 Met Ala Ala Gly Leu Phe Gly Leu Ser Ala Arg Arg Leu Leu Ala
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 Ala Ala Ala Thr Arg Gly Leu Pro Ala Ala Arg Val Arg Trp Glu
 20 25 30
 Ser Ser Phe Ser Arg Thr Val Val Ala Pro Ser Ala Val Ala Gly
 35 40 45
 Lys Arg Pro Pro Glu Pro Thr Thr Pro Trp Gln Glu Asp Pro Glu
 50 55 60
 Pro Glu Asp Glu Asn Leu Tyr Glu Lys Asn Pro Asp Ser His Gly
 65 70 75
 Tyr Asp Lys Asp Pro Val Leu Asp Val Trp Asn Met Arg Leu Val
 80 85 90
 Phe Phe Phe Gly Val Ser Ile Ile Leu Val Leu Gly Ser Thr Phe
 95 100 105
 Val Ala Tyr Leu Pro Asp Tyr Arg Met Lys Glu Trp Ser Arg Arg
 110 115 120
 Glu Ala Glu Arg Leu Val Lys Tyr Arg Glu Ala Asn Gly Leu Pro
 125 130 135
 Ile Met Glu Ser Asn Cys Phe Asp Pro Ser Lys Ile Gln Leu Pro
 140 145 150

Glu Asp Glu

<210> 335
<211> 442
<212> DNA
<213> Homo sapiens

<400> 335
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cgacgcgagg gctcccggcc gcccgcgctcc gctgggaatc tagcttctcc 100
aggactgtgg tcgccccgtc cgctgtggcg ggaagcggc cccagaacc 150
gaccacaccg tggcaagagg acccagaacc cgaggacgaa aacttgatg 200
agaagaacc agactcccat ggttatgaca aggacccgt ttggacgtc 250
tggaacatgc gacttgtctt cttctttggc gtctccatca tcotggctct 300
tggcagcacc ttgtggcct atctgcctga ctacaggatg aaagagtgg 350
ccgcccgcga agctgagagg cttgtgaaat accgagaggc caatggcctt 400
cccatcatgg aatccaactg cttcgacccc agcaagatcc ag 442

<210> 336
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 336
ctgagaccct gcagacccat ctg 23

<210> 337
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 337
ggtgcttctt gagccccact tagc 24

<210> 338
<211> 40
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 338
aatctagctt ctccaggact gtggtcgccc cgtccgctgt 40

<210> 339
<211> 2162
<212> DNA

<213> Homo sapiens

<400> 339

gcggcggtta tgcgcttgc tctgctcgtc ctgttgcctc tggggcccg 50
cggtctgtgc cttgcagaac cccacgcga cagcctgcgg gaggaacttg 100
tcacacccc gctgccttcc ggggaagttag ccgceacatt ccagttccgc 150
acgcgctggg attcggagct tcagcgggaa ggagtgtccc attacaggct 200
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tgcaacctgc attcacaaa ggcttttggg ggaccgcata ctggggggcca 300
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cagggatctt ctgcgcctct ctcaacttca tcgactccac caacacagtc 450
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ctactttctg cgctatgtcg tgctgccgcg ggaggtgttc tgcaccgaaa 550
acctcacccc ctggaagaag ctcttgccct gtagttccaa ggcaggcctc 600
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gggcagggaa agaaagactg gtcctcttcc cggatgttct ccggaacct 800
cacggagccc tgccccctgg ctccagagag ccgagtttat gtggacatca 850
ccacctacaa ccaggacaac gagacattag aggtgcaccc acccccgacc 900
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tgccacttgc tctcctcaga gttggtttt gaaccaaagt gccctggacc 1850
aggtcagggc ctacagctgt gttgtccagt acaggagcca cgagccaaat 1900
gtggcatttg aatttgaatt aacttagaaa ttcatttct cactgtagt 1950
ggccacctct atattgaggt gctcaataag caaaagtggc cgggtggctgc 2000
tgtattggac agcacagaaa aagatttcca tcaccacaga aagtgoggt 2050
ggcagcactg gccaaagtg tgggggtgtc tacacagtgt atgtcactgt 2100
gtagtggatg gagtttactg tttgtggaat aaaaacggct gtttcctgtg 2150
aaaaaaaa aa 2162

<210> 340
<211> 574
<212> PRT
<213> Homo sapiens

<400> 340
Met Pro Leu Ala Leu Leu Val Leu Leu Leu Gly Pro Gly Gly
1 5 10 15
Trp Cys Leu Ala Glu Pro Pro Arg Asp Ser Leu Arg Glu Glu Leu
20 25 30
Val Ile Thr Pro Leu Pro Ser Gly Asp Val Ala Ala Thr Phe Gln
35 40 45
Phe Arg Thr Arg Trp Asp Ser Glu Leu Gln Arg Glu Gly Val Ser
50 55 60
His Tyr Arg Leu Phe Pro Lys Ala Leu Gly Gln Leu Ile Ser Lys
65 70 75
Tyr Ser Leu Arg Glu Leu His Leu Ser Phe Thr Gln Gly Phe Trp
80 85 90
Arg Thr Arg Tyr Trp Gly Pro Pro Phe Leu Gln Ala Pro Ser Gly
95 100 105
Ala Glu Leu Trp Val Trp Phe Gln Asp Thr Val Thr Asp Val Asp
110 115 120
Lys Ser Trp Lys Glu Leu Ser Asn Val Leu Ser Gly Ile Phe Cys
125 130 135
Ala Ser Leu Asn Phe Ile Asp Ser Thr Asn Thr Val Thr Pro Thr
140 145 150

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ala | Ser | Phe | Lys | Pro | Leu | Gly | Leu | Ala | Asn | Asp | Thr | Asp | His | Tyr | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Phe | Leu | Arg | Tyr | Ala | Val | Leu | Pro | Arg | Glu | Val | Val | Cys | Thr | Glu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Asn | Leu | Thr | Pro | Trp | Lys | Lys | Leu | Leu | Pro | Cys | Ser | Ser | Lys | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Gly | Leu | Ser | Val | Leu | Leu | Lys | Ala | Asp | Arg | Leu | Phe | His | Thr | Ser | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Tyr | His | Ser | Gln | Ala | Val | His | Ile | Arg | Pro | Val | Cys | Arg | Asn | Ala | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Arg | Cys | Thr | Ser | Ile | Ser | Trp | Glu | Leu | Arg | Gln | Thr | Leu | Ser | Val | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Val | Phe | Asp | Ala | Phe | Ile | Thr | Gly | Gln | Gly | Lys | Lys | Asp | Trp | Ser | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Phe | Arg | Met | Phe | Ser | Arg | Thr | Leu | Thr | Glu | Pro | Cys | Pro | Leu | |
| | | | | 260 | | | | | 265 | | | | | 270 | |
| Ala | Ser | Glu | Ser | Arg | Val | Tyr | Val | Asp | Ile | Thr | Thr | Tyr | Asn | Gln | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Asp | Asn | Glu | Thr | Leu | Glu | Val | His | Pro | Pro | Pro | Thr | Thr | Thr | Tyr | |
| | | | | 290 | | | | | 295 | | | | | 300 | |
| Gln | Asp | Val | Ile | Leu | Gly | Thr | Arg | Lys | Thr | Tyr | Ala | Ile | Tyr | Asp | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Leu | Leu | Asp | Thr | Ala | Met | Ile | Asn | Asn | Ser | Arg | Asn | Leu | Asn | Ile | |
| | | | | 320 | | | | | 325 | | | | | 330 | |
| Gln | Leu | Lys | Trp | Lys | Arg | Pro | Pro | Glu | Asn | Glu | Ala | Pro | Pro | Val | |
| | | | | 335 | | | | | 340 | | | | | 345 | |
| Pro | Phe | Leu | His | Ala | Gln | Arg | Tyr | Val | Ser | Gly | Tyr | Gly | Leu | Gln | |
| | | | | 350 | | | | | 355 | | | | | 360 | |
| Lys | Gly | Glu | Leu | Ser | Thr | Leu | Leu | Tyr | Asn | Thr | His | Pro | Tyr | Arg | |
| | | | | 365 | | | | | 370 | | | | | 375 | |
| Ala | Phe | Pro | Val | Leu | Leu | Leu | Asp | Thr | Val | Pro | Trp | Tyr | Leu | Arg | |
| | | | | 380 | | | | | 385 | | | | | 390 | |
| Leu | Tyr | Val | His | Thr | Leu | Thr | Ile | Thr | Ser | Lys | Gly | Lys | Glu | Asn | |
| | | | | 395 | | | | | 400 | | | | | 405 | |
| Lys | Pro | Ser | Tyr | Ile | His | Tyr | Gln | Pro | Ala | Gln | Asp | Arg | Leu | Gln | |
| | | | | 410 | | | | | 415 | | | | | 420 | |
| Pro | His | Leu | Leu | Glu | Met | Leu | Ile | Gln | Leu | Pro | Ala | Asn | Ser | Val | |
| | | | | 425 | | | | | 430 | | | | | 435 | |
| Thr | Lys | Val | Ser | Ile | Gln | Phe | Glu | Arg | Ala | Leu | Leu | Lys | Trp | Thr | |
| | | | | 440 | | | | | 445 | | | | | 450 | |
| Glu | Tyr | Thr | Pro | Asp | Pro | Asn | His | Gly | Phe | Tyr | Val | Ser | Pro | Ser | |
| | | | | 455 | | | | | 460 | | | | | 465 | |

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Val | Leu | Ser | Ala | Leu | Val | Pro | Ser | Met | Val | Ala | Ala | Lys | Pro | Val |
| | | | | 470 | | | | | 475 | | | | | 480 |
| Asp | Trp | Glu | Glu | Ser | Pro | Leu | Phe | Asn | Ser | Leu | Phe | Pro | Val | Ser |
| | | | | 485 | | | | | 490 | | | | | 495 |
| Asp | Gly | Ser | Asn | Tyr | Phe | Val | Arg | Leu | Tyr | Thr | Glu | Pro | Leu | Leu |
| | | | | 500 | | | | | 505 | | | | | 510 |
| Val | Asn | Leu | Pro | Thr | Pro | Asp | Phe | Ser | Met | Pro | Tyr | Asn | Val | Ile |
| | | | | 515 | | | | | 520 | | | | | 525 |
| Cys | Leu | Thr | Cys | Thr | Val | Val | Ala | Val | Cys | Tyr | Gly | Ser | Phe | Tyr |
| | | | | 530 | | | | | 535 | | | | | 540 |
| Asn | Leu | Leu | Thr | Arg | Thr | Phe | His | Ile | Glu | Glu | Pro | Arg | Thr | Gly |
| | | | | 545 | | | | | 550 | | | | | 555 |
| Gly | Leu | Ala | Lys | Arg | Leu | Ala | Asn | Leu | Ile | Arg | Arg | Ala | Arg | Gly |
| | | | | 560 | | | | | 565 | | | | | 570 |

Val Pro Pro Leu

<210> 341
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 341
 tggacaccgt accctggtat ctgc 24

<210> 342
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <221> Artificial Sequence
 <222> 1-24
 <223> Synthetic oligonucleotide probe

<400> 342
 ccaactctga ggagagcaag tggc 24

<210> 343
 <211> 44
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 343
 tgtatgtgca caccctcacc atcacctcca agggcaagga gaac 44

<210> 344
 <211> 762
 <212> DNA
 <213> Homo sapiens

<400> 344
 caacatgggg tccagcagct tcttggtcct catggtgtct ctogttcttg 50
 tgaccctggg ggctgtggaa ggagttaaag agggatataga gaaagcaggg 100
 gtttgccag ctgacaacgt acgctgcttc aagtcgcatc ctccccagtg 150
 tcacacagac caggactgtc tgggggaaaag gaagtgttgt tacctgcact 200
 gtggcttcaa gtgtgtgatt cctgtgaagg aactggaaga aggaggaaac 250
 aaggatgaag atgtgtcaag gccataccct gagccaggat gggaggccaa 300
 gtgtccaggc tctctctcta ccaggtgtcc tcagaaatga tgctgggtcc 350
 tttctacctc tgggggtcac tctcacttgg cacctgcccc tgagggtcct 400
 gagacttga ataggaaga agcaataccc aaccccacca aagaaaacct 450
 gagcttgaag tccttttccc caaaaagagg gaagagtcac aaaaagtcca 500
 gaccccgagg acggtacttt ccctctctac ctggtgctcc tcctaattgc 550
 tcatgaatgg acccctcatg aatgaaacca gtgcccttat aagagacccc 600
 aaagagctgc cttgcccttc tgcaatgtgt gatcacagct agaaggcact 650
 gtcagagaag agaaaactgt cctcaccaga tgctgaatct gctgtgctc 700
 tgatcttga cttccagcc tctagaactg taagaaataa atatttgctg 750
 tttataatcc aa 762

<210> 345
 <211> 111
 <212> PRT
 <213> Homo sapiens

<400> 345
 Met Gly Ser Ser Ser Phe Leu Val Leu Met Val Ser Leu Val Leu
 1 5 10 15
 Val Thr Leu Val Ala Val Glu Gly Val Lys Glu Gly Ile Glu Lys
 20 25 30
 Ala Gly Val Cys Pro Ala Asp Asn Val Arg Cys Phe Lys Ser Asp
 35 40 45
 Pro Pro Gln Cys His Thr Asp Gln Asp Cys Leu Gly Glu Arg Lys
 50 55 60
 Cys Cys Tyr Leu His Cys Gly Phe Lys Cys Val Ile Pro Val Lys
 65 70 75
 Glu Leu Glu Glu Gly Gly Asn Lys Asp Glu Asp Val Ser Arg Pro
 80 85 90
 Tyr Pro Glu Pro Gly Trp Glu Ala Lys Cys Pro Gly Ser Ser Ser
 95 100 105
 Thr Arg Cys Pro Gln Lys
 110

<210> 346
 <211> 2528
 <212> DNA
 <213> Homo sapiens

<400> 346
 aaactcagca cttgccggag tggctcattg ttaagacaaa ggggtgtgcac 50
 ttcttgccca ggaacacctga gcggtgagac tccagctgc ctacatcaag 100
 gcccaggac atgcagaacc ttctctaga acccgacca ccacatgag 150
 gtctgcctg tggagatgca ggcacctgag ccaaggcgtc cagtggctct 200
 tgcttctgac tgtctggtc ttctttctct tgccttgcc ctcttttatt 250
 aaggagcctc aaacaaagcc ttccaggcat caacgcacag agaacttaa 300
 agaaaggtct ctacagtccc tggcaagacc taagtcccag gcacccacaa 350
 gggcgaggag gacaaccatc tatgcagagc cagcgccaga gaacaatgcc 400
 ctcaacacac aaaccagcc caagggccac accaccggag acagaggaaa 450
 ggagggcaac caggcaccgc cggaggagca ggacaagggtg cccacacag 500
 cacagagggc agcatggaag agcccagaaa aagagaaaa catggtgaac 550
 acactgtcac ccagagggca agatgcaggg atggcctctg gcaggacaga 600
 ggcacaatca tggagagacc aggcacacaaa gacgacccaa ggaatgggg 650
 gccagaccag gaagctgacg gcctccagga cgggtgcaga gaagcaccag 700
 ggcaaaagcg caaccacagc caagacgctc attccaaaa gtcagcacag 750
 aatgctggct cccacaggag cagtgtcaac aaggacgaga cagaaaggag 800
 tgaccacagc agtcatcca cctaaggaga agaaacctca ggccacccca 850
 cccctgtccc ctctccagag cccacgacg cagagaaacc aaagactgaa 900
 ggcgcgaac ttcaaactcg agcctcggtg ggattttgag gaaaaatata 950
 gcttcgaaat aggaggcctt cagacgactt gccctgactc tgtgaagatc 1000
 aaagcctcca agtcgctgtg gctccagaaa ctctttctgc ccaacctcac 1050
 tctcttctgt gactccagac acttcaacca gagtgaagtgg gaccgcctgg 1100
 aacactttgc accacccttt ggcttcattg agctcaacta ctcttgggtg 1150
 cagaaggtgc tgacacgctt cctccagtg cccagcagc agctgtctct 1200
 ggcacgctc ccgctggga gcctccggtg catcacctgt gccgtggtg 1250
 gcaacggggg catctgaac aactcccaca tgggccagga gatagacagt 1300
 cagcgtacg tgttcgatt gagcggagct ctattaaag gctacgaaca 1350
 ggatgtgggg actcggacat ccttctacg ctctacggc ttctccctga 1400
 cccagtcact ccttatattg ggcaatcggg gtttcaagaa cgtgcctctt 1450

gggaaggacg tccgctactt gcacttcctg gaaggcaccc gggactatga 1500
 gtggctgtaa gcactgctta tgaatcagac ggtgatgtca aaaaaccttt 1550
 tctggttcag gcacagaccc caggaagctt ttcgggaagc cctgcacatg 1600
 gacagggtacc tgttgctgca ccagactttt ctccgataca tgaagaacag 1650
 gtttctgagg tctaagaccc tggatgggtg ccaactggagg atataccgcc 1700
 ccaccactgg ggcctctctg ctgctcactg cccttcagct ctgtgaccag 1750
 gtgagtgcct atggcttcat cactgagggc catgagcgct tttctgatca 1800
 ctactatgat acatcatgga agcggctgat cttttacata aaccatgact 1850
 tcaagctgga gagagaagtc tggaagcggc tacacgatga agggataatc 1900
 cggtgtgacc agcgtcctgg tcccggaact gccaaagcca agaactgacc 1950
 ggggccaggc ctgcatggt ctccttgctt gctccaaggc acaggataca 2000
 gtgggaatct tgagactctt tggccatttc ccatggctca gactaagctc 2050
 caagcccttc aggagtcca agggaaact tgaacctagg acaagactct 2100
 ctcaagatgg caaatggcta attgagggtc tgaagttctt cagtacattg 2150
 ctgtaggtcc tgaggccagg gatttttaat taaatggggt gatgggtggc 2200
 caataccaca attcctgctg aaaaacactt ttccagtcca aaagcttctt 2250
 gatacagaaa aaagagcctg gatttacaga aacatataga tctggtttga 2300
 attccagatc gagtttacag ttgtgaaatc ttgaagggtat tacttaactt 2350
 cactacagat tgtctagaag acctttctag gagttatctg attctagaag 2400
 ggtctatact tgtccttgct ttttaagctat ttgacaactc tacgtgttgt 2450
 agaaaaactga taataatata aatgattgtt gtccatggaa aggcaaataa 2500
 attttctaca gtgaaaaaaaa aaaaaaaaaa 2528

<210> 347
 <211> 600
 <212> PRT
 <213> Homo sapiens

<400> 347
 Met Arg Ser Cys Leu Trp Arg Cys Arg His Leu Ser Gln Gly Val
 1 5 10 15
 Gln Trp Ser Leu Leu Leu Ala Val Leu Val Phe Phe Leu Phe Ala
 20 25 30
 Leu Pro Ser Phe Ile Lys Glu Pro Gln Thr Lys Pro Ser Arg His
 35 40 45
 Gln Arg Thr Glu Asn Ile Lys Glu Arg Ser Leu Gln Ser Leu Ala
 50 55 60
 Lys Pro Lys Ser Gln Ala Pro Thr Arg Ala Arg Arg Thr Thr Ile

| | | |
|---|-----|-----|
| 380 | 385 | 390 |
| Arg Leu Ser Gly Ala Leu Ile Lys Gly Tyr Glu Gln Asp Val Gly | | |
| 395 | 400 | 405 |
| Thr Arg Thr Ser Phe Tyr Gly Phe Thr Ala Phe Ser Leu Thr Gln | | |
| 410 | 415 | 420 |
| Ser Leu Leu Ile Leu Gly Asn Arg Gly Phe Lys Asn Val Pro Leu | | |
| 425 | 430 | 435 |
| Gly Lys Asp Val Arg Tyr Leu His Phe Leu Glu Gly Thr Arg Asp | | |
| 440 | 445 | 450 |
| Tyr Glu Trp Leu Glu Ala Leu Leu Met Asn Gln Thr Val Met Ser | | |
| 455 | 460 | 465 |
| Lys Asn Leu Phe Trp Phe Arg His Arg Pro Gln Glu Ala Phe Arg | | |
| 470 | 475 | 480 |
| Glu Ala Leu His Met Asp Arg Tyr Leu Leu Leu His Pro Asp Phe | | |
| 485 | 490 | 495 |
| Leu Arg Tyr Met Lys Asn Arg Phe Leu Arg Ser Lys Thr Leu Asp | | |
| 500 | 505 | 510 |
| Gly Ala His Trp Arg Ile Tyr Arg Pro Thr Thr Gly Ala Leu Leu | | |
| 515 | 520 | 525 |
| Leu Leu Thr Ala Leu Gln Leu Cys Asp Gln Val Ser Ala Tyr Gly | | |
| 530 | 535 | 540 |
| Phe Ile Thr Glu Gly His Glu Arg Phe Ser Asp His Tyr Tyr Asp | | |
| 545 | 550 | 555 |
| Thr Ser Trp Lys Arg Leu Ile Phe Tyr Ile Asn His Asp Phe Lys | | |
| 560 | 565 | 570 |
| Leu Glu Arg Glu Val Trp Lys Arg Leu His Asp Glu Gly Ile Ile | | |
| 575 | 580 | 585 |
| Arg Leu Tyr Gln Arg Pro Gly Pro Gly Thr Ala Lys Ala Lys Asn | | |
| 590 | 595 | 600 |

<210> 348

<211> 496

<212> DNA

<213> Homo sapiens

<400> 348

cgatgcgcgg acccgggcac cccctcctcc tggggctgct gctgggtgctg 50

gggccttcgc cggagcagcg agtgaaaatt gttcctcgag atctgaggat 100

gaaggacaaag ttctctaaac accttacagg cctcttttat tttagtccaa 150

agtgcacgaa acacttccat agactttatc acaacaccag agactgcacc 200

attcctgcac actataaaag atgcgccagg cttcttcccc ggctggctgtg 250

cagtccagtg tgcattggagg ataagtgagc agaccgtaca ggagcagcac 300

accaggagcc atgagaagtg ccttggaaac caacagggaa acagaactat 350

ctttatacac atccccctcat ggacaagaga tttatttttg cagacagact 400
 cttccataag tccttttgagt tttgtatgtt gttgacagtt tgcagatata 450
 tattogataa atcagtgtagc ttgacagtggt tatctgtcac ttattt 496

<210> 349
 <211> 91
 <212> PRT
 <213> Homo sapiens

<400> 349
 Met Arg Gly Pro Gly His Pro Leu Leu Leu Gly Leu Leu Leu Val
 1 5 10 15
 Leu Gly Pro Ser Pro Glu Gln Arg Val Glu Ile Val Pro Arg Asp
 20 25 30
 Leu Arg Met Lys Asp Lys Phe Leu Lys His Leu Thr Gly Pro Leu
 35 40 45
 Tyr Phe Ser Pro Lys Cys Ser Lys His Phe His Arg Leu Tyr His
 50 55 60
 Asn Thr Arg Asp Cys Thr Ile Pro Ala Tyr Tyr Lys Arg Cys Ala
 65 70 75
 Arg Leu Leu Thr Arg Leu Ala Val Ser Pro Val Cys Met Glu Asp
 80 85 90
 Lys

<210> 350
 <211> 1141
 <212> DNA
 <213> Homo sapiens

<400> 350
 gggctggggc cgcgcgcagc tccagctggc cggcttggtc ctgcgggtccc 50
 ttctctggga ggcccgaccc cggccgcgcc cagcccccac catgccaccc 100
 gcgggggtccc gccggggcgc gccgctcacc gcaatcgctc tgttggtgct 150
 gggggctccc ctggtgctgg ccggcgagga ctgcctgtgg tacctggacc 200
 ggaatggctc ctggcatccg ggggtttaact gcgagttctt cacctctgc 250
 tgcgggacct gctaccatcg gtactgtgc agggacotga ccttgcttat 300
 caccgagagg cagcagaagc actgcctggc ctacagcccc aagaccatag 350
 caggcatcgc ctacagctgtg atcctctttg ttgctgtggt tgccaccacc 400
 atctgctgct tcctctgttc ctgttgctac ctgtaccgcc gccgccagca 450
 gctccagagc caatttgaag gccaggagat tccaatgaca ggcatcccag 500
 tgcagccagt atacccatac cccagagacc ccaaagctgg cctgcaccc 550
 ccacagcctg gcttcatgta ccacacctagt ggtcctgctc cccaatatcc 600

actctaccca gctgggcccc cagtctacaa ccctgcagct cctcctccct 650
 atatgccacc acagccctct taccggggag cctgaggaac cagccatgct 700
 tctgctgcc cttcagtgat gccaaccttg ggagatgccc tcatcctgta 750
 cctgcatctg gtccctgggg tggcaggagt cctccagcca ccaggcccca 800
 gaccaagcca agccctgggc cctactgggg acagagcccc agggaagtgg 850
 aacaggagct gaactagaac tatgaggggt tggggggagg gcttggaatt 900
 atgggctatt ttactgggg gcaaggggagg gagatgacag cctgggtcac 950
 agtgctgtt ttcaaatagt cctctgctc ccaagatccc agccaggaag 1000
 gctggggccc tactgtttgt cccctctggg ctgggggtgg gggagggagg 1050
 aggttcctgc agcagctggc agtagccctc ctctctggct gcccactgg 1100
 ccacatctct ggctgctag attaaagctg taaagacaaa a 1141

<210> 351
 <211> 197
 <212> PRT
 <213> Homo sapiens

<400> 351
 Met Pro Pro Ala Gly Leu Arg Arg Ala Ala Pro Leu Thr Ala Ile
 1 5 10 15
 Ala Leu Leu Val Leu Gly Ala Pro Leu Val Leu Ala Gly Glu Asp
 20 25 30
 Cys Leu Trp Tyr Leu Asp Arg Asn Gly Ser Trp His Pro Gly Phe
 35 40 45
 Asn Cys Glu Phe Phe Thr Phe Cys Cys Gly Thr Cys Tyr His Arg
 50 55 60
 Tyr Cys Cys Arg Asp Leu Thr Leu Leu Ile Thr Glu Arg Gln Gln
 65 70 75
 Lys His Cys Leu Ala Phe Ser Pro Lys Thr Ile Ala Gly Ile Ala
 80 85 90
 Ser Ala Val Ile Leu Phe Val Ala Val Ala Thr Thr Ile Cys
 95 100 105
 Cys Phe Leu Cys Ser Cys Cys Tyr Leu Tyr Arg Arg Arg Gln Gln
 110 115 120
 Leu Gln Ser Pro Phe Glu Gly Gln Glu Ile Pro Met Thr Gly Ile
 125 130 135
 Pro Val Gln Pro Val Tyr Pro Tyr Pro Gln Asp Pro Lys Ala Gly
 140 145 150
 Pro Ala Pro Pro Gln Pro Gly Phe Met Tyr Pro Pro Ser Gly Pro
 155 160 165
 Ala Pro Gln Tyr Pro Leu Tyr Pro Ala Gly Pro Pro Val Tyr Asn
 170 175 180

Pro Ala Ala Pro Pro Pro Tyr Met Pro Pro Gln Pro Ser Tyr Pro
185 190 195

Gly Ala

<210> 352
<211> 3226
<212> DNA
<213> Homo sapiens

<400> 352
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gcggcccccag aaccccaggt aggtagagca agaagatggt gttctgccc 100
ctcaaatggt cccttgcaac catgtcattt ctactttcct cactgttggc 150
tctottaact gtgtccactc cttcatggtg tcagagcact gaagcatctc 200
caaacgctag tgatgggaca ccatttcctt ggaataaaat acgacttctc 250
gagtacgtca tcccagttca ttatgatctc ttgatccatg caaaccttac 300
cacgctgacc ttctggggaa ccacgaaagt agaaatcaca gccagtcage 350
ccaccagcac catcatctg catagtcacc acctgcagat atctagggcc 400
accctcagga agggagctgg agagaggcta tcggaagaac cctgcagggt 450
cctggaacac cccctcag agcaaatgac actgctggct ccgagcccc 500
tccttgtcgg gctcccgtag acagttgtca ttactatgc tggcaatctt 550
tcggagactt tccacggatt ttacaaaagc acctacagaa ccaaggaagg 600
ggaactgagg atactagcat caacacaatt tgaacccact gcagctagaa 650
tggcctttcc ctgctttgat gaacctgcct tcaaagcaaag tttctcaatc 700
aaaattagaa gagagccaag gcacctagcc atctccaata tgccattggt 750
gaaatctgtg actgttgctg aaggactcat agaagaccat ttgtatgta 800
ctgtgaagat gagcacctat ctggtggcct tcatcatttc agattttgag 850
tctgtcagca agataaccaa gagtggagtc aaggtttctg tttatgtctg 900
gccagacaag ataaatcaag cagattatgc actggatgct ggggtgactc 950
ttctagaatt ttatgaggat tatttcagca taccgatatcc cctacccaaa 1000
caagatcttg ctgtatttcc cgactttcag tctggtgcta tggaaaaactg 1050
gggactgaca acatatagag aatctgctct gttgtttgat gcagaaaagt 1100
cttctgcacg aagtaagctt ggcacacagc tgactgtggc ccatgaactg 1150
gcccaccagt ggtttgggaa cctggtcact atggaatggt ggaatgatct 1200
ttggctaata gaaggatttg ccaaatttat ggagtttgtg tctgtcagtg 1250
tgaccocatcc tgaactgaaa gttggagatt atttcttttg caaatgtttt 1300

aacgtatgta aaaattcctc ccttgcccg ttcctgttat ctctaatacac 2950
 caacattttg ttgagtgtat ttccaacta gagatggctg ttttggctcc 3000
 aactggagat acctttttcc cttcaactca ttttttgact atccctgtga 3050
 aaagaatagc tgttagtttt tcatgaatgg gctttttcat gaatgggcta 3100
 togtaccat gtgttttgtt catcacaggt gttgccctgc aacgtaaacc 3150
 caagtgttgg gttccctgcc acagaagaat aaagtacott attcttctca 3200
 aaaaaaaaa aaaaaaaaa aaaaaa 3226

<210> 353
 <211> 941
 <212> PRT
 <213> Homo sapiens

<400> 353
 Met Val Phe Leu Pro Leu Lys Trp Ser Leu Ala Thr Met Ser Phe
 1 5 10 15
 Leu Leu Ser Ser Leu Leu Ala Leu Leu Thr Val Ser Thr Pro Ser
 20 25 30
 Trp Cys Gln Ser Thr Glu Ala Ser Pro Lys Arg Ser Asp Gly Thr
 35 40 45
 Pro Phe Pro Trp Asn Lys Ile Arg Leu Pro Glu Tyr Val Ile Pro
 50 55 60
 Val His Tyr Asp Leu Leu Ile His Ala Asn Leu Thr Thr Leu Thr
 65 70 75
 Phe Trp Gly Thr Thr Lys Val Glu Ile Thr Ala Ser Gln Pro Thr
 80 85 90
 Ser Thr Ile Ile Leu His Ser His His Leu Gln Ile Ser Arg Ala
 95 100 105
 Thr Leu Arg Lys Gly Ala Gly Glu Arg Leu Ser Glu Glu Pro Leu
 110 115 120
 Gln Val Leu Glu His Pro Pro Gln Glu Gln Ile Ala Leu Leu Ala
 125 130 135
 Pro Glu Pro Leu Leu Val Gly Leu Pro Tyr Thr Val Val Ile His
 140 145 150
 Tyr Ala Gly Asn Leu Ser Glu Thr Phe His Gly Phe Tyr Lys Ser
 155 160 165
 Thr Tyr Arg Thr Lys Glu Gly Glu Leu Arg Ile Leu Ala Ser Thr
 170 175 180
 Gln Phe Glu Pro Thr Ala Ala Arg Met Ala Phe Pro Cys Phe Asp
 185 190 195
 Glu Pro Ala Phe Lys Ala Ser Phe Ser Ile Lys Ile Arg Arg Glu
 200 205 210
 Pro Arg His Leu Ala Ile Ser Asn Met Pro Leu Val Lys Ser Val

| | | | | | |
|-----------------|-------------------------|---------------------|-----|--|-----|
| | 215 | | 220 | | 225 |
| Thr Val Ala Glu | Gly Leu Ile Glu Asp | His Phe Asp Val Thr | Val | | |
| | 230 | | 235 | | 240 |
| Lys Met Ser Thr | Tyr Leu Val Ala Phe | Ile Ile Ser Asp Phe | Glu | | |
| | 245 | | 250 | | 255 |
| Ser Val Ser Lys | Ile Thr Lys Ser Gly | Val Lys Val Ser Val | Tyr | | |
| | 260 | | 265 | | 270 |
| Ala Val Pro Asp | Lys Ile Asn Gln Ala | Asp Tyr Ala Leu Asp | Ala | | |
| | 275 | | 280 | | 285 |
| Ala Val Thr Leu | Leu Glu Phe Tyr Glu | Asp Tyr Phe Ser Ile | Pro | | |
| | 290 | | 295 | | 300 |
| Tyr Pro Leu Pro | Lys Gln Asp Leu Ala | Ala Ile Pro Asp Phe | Gln | | |
| | 305 | | 310 | | 315 |
| Ser Gly Ala Met | Glu Asn Trp Gly Leu Thr | Thr Tyr Arg Glu Ser | | | |
| | 320 | | 325 | | 330 |
| Ala Leu Leu Phe | Asp Ala Glu Lys Ser | Ser Ala Ser Ser Lys | Leu | | |
| | 335 | | 340 | | 345 |
| Gly Ile Thr Val | Thr Val Ala His Glu | Leu Ala His Gln Trp | Phe | | |
| | 350 | | 355 | | 360 |
| Gly Asn Leu Val | Thr Met Glu Trp Trp | Asn Asp Leu Trp Leu | Asn | | |
| | 365 | | 370 | | 375 |
| Glu Gly Phe Ala | Lys Phe Met Glu Phe | Val Ser Val Ser Val | Thr | | |
| | 380 | | 385 | | 390 |
| His Pro Glu Leu | Lys Val Gly Asp Tyr | Phe Phe Gly Lys Cys | Phe | | |
| | 395 | | 400 | | 405 |
| Asp Ala Met Glu | Val Asp Ala Leu Asn | Ser Ser His Pro Val | Ser | | |
| | 410 | | 415 | | 420 |
| Thr Pro Val Glu | Asn Pro Ala Gln Ile | Arg Glu Met Phe Asp | Asp | | |
| | 425 | | 430 | | 435 |
| Val Ser Tyr Asp | Lys Gly Ala Cys Ile | Leu Asn Met Leu Arg | Glu | | |
| | 440 | | 445 | | 450 |
| Tyr Leu Ser Ala | Asp Ala Phe Lys Ser | Gly Ile Val Gln Tyr | Leu | | |
| | 455 | | 460 | | 465 |
| Gln Lys His Ser | Tyr Lys Asn Thr Lys | Asn Glu Asp Leu Trp | Asp | | |
| | 470 | | 475 | | 480 |
| Ser Met Ala Ser | Ile Cys Pro Thr Asp | Gly Val Lys Gly Met | Asp | | |
| | 485 | | 490 | | 495 |
| Gly Phe Cys Ser | Arg Ser Gln His Ser | Ser Ser Ser Ser His | Trp | | |
| | 500 | | 505 | | 510 |
| His Gln Glu Gly | Val Asp Val Lys Thr | Met Met Asn Thr Trp | Thr | | |
| | 515 | | 520 | | 525 |
| Leu Gln Arg Gly | Phe Pro Leu Ile Thr | Ile Thr Val Arg Gly | Arg | | |

[illegible]

| | | | | | |
|-----------------|-----------------------------|-------------------------|-----|--|-----|
| | 845 | | 850 | | 855 |
| Asn Trp Asn Lys | Leu Val Gln Lys Phe | Glu Leu Gly Ser Ser Ser | | | |
| | 860 | 865 | | | 870 |
| Ile Ala His Met | Val Met Gly Thr Thr | Asn Gln Phe Ser Thr Arg | | | |
| | 875 | 880 | | | 885 |
| Thr Arg Leu Glu | Glu Val Lys Gly Phe | Phe Ser Ser Leu Lys Glu | | | |
| | 890 | 895 | | | 900 |
| Asn Gly Ser Gln | Leu Arg Cys Val Gln | Gln Thr Ile Glu Thr Ile | | | |
| | 905 | 910 | | | 915 |
| Glu Glu Asn Ile | Gly Trp Met Asp Lys | Asn Phe Asp Lys Ile Arg | | | |
| | 920 | 925 | | | 930 |
| Val Trp Leu Gln | Ser Glu Lys Leu Glu Arg Met | | | | |
| | 935 | 940 | | | |

<210> 354
 <211> 1587
 <212> DNA
 <213> Homo sapiens

<400> 354
 cagccacaga cgggtcatga gcgcggtatt actgctggcc ctctctgggt 50
 tcatctccc actgccagga gtgcaggcgc tgctctgcc gtttgggaca 100
 gttcagcatg tgtggaaggt gtccgacct ccccgcaat ggacctata 150
 gaacaccagc tgcagacagc gcttgggggt ccaggacacg ttgatgtcga 200
 ttgagagcgg accccaagtg agcctggtgc tctccaaggc ctgcacggag 250
 gccaaaggacc aggagccccg cgtcactgag caccggatgg gccccggcct 300
 ctccctgata tctacacct tcgtgtgccg ccaggaggac ttctgcaaca 350
 acctcgttaa ctccctcccg ctttgggccc cacagcccc agcagacca 400
 ggatccttga ggtgccagct ctgcttgtct atggaaggct gctggagggt 450
 gacaacagaa gagatctgcc ccaaggggac cacacactgt tatgatggcc 500
 tctcaggct cagggggagga ggcattctct ccaatctgag agtccaggga 550
 tgcatgcccc agccagggtg caacctgtct aatgggacac aggaaattgg 600
 gccctgtggg atgactgaga actgcaatag gaaagatttt ctgacctgtc 650
 atcgggggac caccattatg acacacggaa acttggctca agaaccact 700
 gattggacca catcgaatac cgagatgtgc gaggtggggc aggtgtgtca 750
 ggagacgctg ctgctcatag atgtaggact cacatcaacc ctggtgggga 800
 caaaaaggctg cagcactgtt ggggctcaaa attcccagaa gaccaccatc 850
 cactcagccc ctctgggggt gcttgtggcc tctataccc acttctgtct 900
 ctcggaacctg tgcaatagtg ccagcagcag cagcgttctg ctgaactccc 950

tccctcctca agctgccccct gtcccaggag accggcagtg tcctacctgt 1000
 gtgcagcccc ttggaacctg ttcaagtggc tccccccgaa tgacctgccc 1050
 caggggggcc actcattgtt atgatgggta cattcatctc tcaggagggtg 1100
 ggcgtgtccac caaaatgagc attcaggget gcgtggccca accttcacgc 1150
 ttcttgttga accacaccag acaaatoggg atcttctctg cgcgtgagaa 1200
 gcgtgatgtg cagcctctctg cctctcagca tgagggagggt ggggctgagg 1250
 gcctggagtc tctcacttgg ggggtggggc tggcactggc cccagcgcgtg 1300
 tgggtggggag tggtttggcc ttctgtctaa ctctattacc cccacgatc 1350
 ttcaccgcgtg ctgaccaccc aactcaacc tcctctgtac ctcataacct 1400
 aatggccttg gacaccagat tctttcccat tctgtccatg aatcatcttc 1450
 cccacacaca atcattcata tctactcacc taacagcaac actggggaga 1500
 gcctggagca tccggacttg ccctatggga gaggggacgc tggaggagtg 1550
 gctgcatgta tctgataata cagaccctgt cctttca 1587

<210> 355
 <211> 437
 <212> PRT
 <213> Homo sapiens

<400> 355
 Met Ser Ala Val Leu Leu Leu Ala Leu Leu Gly Phe Ile Leu Pro
 1 5 10 15
 Leu Pro Gly Val Gln Ala Leu Leu Cys Gln Phe Gly Thr Val Gln
 20 25 30
 His Val Trp Lys Val Ser Asp Leu Pro Arg Gln Trp Thr Pro Lys
 35 40 45
 Asn Thr Ser Cys Asp Ser Gly Leu Gly Cys Gln Asp Thr Leu Met
 50 55 60
 Leu Ile Glu Ser Gly Pro Gln Val Ser Leu Val Leu Ser Lys Gly
 65 70 75
 Cys Thr Glu Ala Lys Asp Gln Glu Pro Arg Val Thr Glu His Arg
 80 85 90
 Met Gly Pro Gly Leu Ser Leu Ile Ser Tyr Thr Phe Val Cys Arg
 95 100 105
 Gln Glu Asp Phe Cys Asn Asn Leu Val Asn Ser Leu Pro Leu Trp
 110 115 120
 Ala Pro Gln Pro Pro Ala Ala Asp Pro Gly Ser Leu Arg Cys Pro Val
 125 130 135
 Cys Leu Ser Met Glu Gly Cys Leu Glu Gly Thr Thr Glu Glu Ile
 140 145 150
 Cys Pro Lys Gly Thr Thr His Cys Tyr Asp Gly Leu Leu Arg Leu

<400> 356
 gcgacgggca ggacgcccc ttgcctagc gcgtgctcag gagggtgtgt 50
 cctgcctgog ctcaggatga gggggaatct ggccctgtgt ggcgttctaa 100
 tcagcctggc cttcctgtca ctgctgcoat ctggacatoc tcagccggct 150
 ggcatgagc cctgctctgt gcagatcctc gtcctgtgcc tcaaagggga 200
 tgccgggagag aaggagagaca aaggcgcccc cggacggcct ggaagagtcg 250
 gccccacggg agaaaaagga gacatggggg acaaaggaca gaaaggcagt 300
 gtgggtcgtc atggaaaaat tgggtccatt ggctctaaag gtgagaaagg 350
 agattccggt gacataggac cccctgggtcc taatggagaa ccaggcctcc 400
 catgtgagtg cagccagctg cgcaaggcca tcggggagat ggacaaccag 450
 gtctctcagc tgaccacgga gctcaagttc atcaagaatg ctgtcgccgg 500
 tgtgcgcgag acggagagca agatctacct gctggtgaag gaggagaagc 550
 gctacgcgga cgcccagctg tccctgccagg gccgcggggg cagctgagc 600
 atgcccgaag acgaggctgc caatggcctg atggccgcat acctggcgca 650
 agccggcctg gcccggtgtc tcactcgcat caacgacctg gagaaggagg 700
 gcgcctctgt gtactctgac cactcccca tgccggacct caacaagtgg 750
 cgcagcgggt agcccaacaa tgccctacgac gaggaggact gcgtggagat 800
 ggtggcctcg ggccggtgga acgacgtggc ctgccacacc accatgtact 850
 tcattgttga gtttgacaag gagaacatgt gagcctcagg ctggggctgc 900
 ccattggggg ccccatatgt cctgcaggg ttggcaggga cagagcccag 950
 accatgtgtc cagccaggga gctgtccctc tgtgaagggt ggaggctcac 1000
 tgagttaggg gctgttgtct aaactgagaa aatggcctat gcttaaggag 1050
 aaaaatgaaag tgttctctgg gtgctgtctc tgaagaagca gagtctcatt 1100
 acctgtattg tagccccaat gtcattatgt aattattacc cagaattgtc 1150
 cttccataaa gcttgtgctt ttgtccaagc tatacaataa aatctttaag 1200
 tagtgcagta gttaagtoca aaaaaaaaaa aaaaaaaaa 1238

<210> 357
 <211> 271
 <212> PRT
 <213> Homo sapiens

<400> 357
 Met Arg Gly Asn Leu Ala Leu Val Gly Val Leu Ile Ser Leu Ala
 1 5 10 15
 Phe Leu Ser Leu Leu Pro Ser Gly His Pro Gln Pro Ala Gly Asp
 20 25 30

Asp Ala Cys Ser Val Gln Ile Leu Val Pro Gly Leu Lys Gly Asp
 35 40 45
 Ala Gly Glu Lys Gly Asp Lys Gly Ala Pro Gly Arg Pro Gly Arg
 50 55 60
 Val Gly Pro Thr Gly Glu Lys Gly Asp Met Gly Asp Lys Gly Gln
 65 70 75
 Lys Gly Ser Val Gly Arg His Gly Lys Ile Gly Pro Ile Gly Ser
 80 85 90
 Lys Gly Glu Lys Gly Asp Ser Gly Asp Ile Gly Pro Pro Gly Pro
 95 100 105
 Asn Gly Glu Pro Gly Leu Pro Cys Glu Cys Ser Gln Leu Arg Lys
 110 115 120
 Ala Ile Gly Glu Met Asp Asn Gln Val Ser Gln Leu Thr Ser Glu
 125 130 135
 Leu Lys Phe Ile Lys Asn Ala Val Ala Gly Val Arg Glu Thr Glu
 140 145 150
 Ser Lys Ile Tyr Leu Leu Val Lys Glu Glu Lys Arg Tyr Ala Asp
 155 160 165
 Ala Gln Leu Ser Cys Gln Gly Arg Gly Gly Thr Leu Ser Met Pro
 170 175 180
 Lys Asp Glu Ala Ala Asn Gly Leu Met Ala Ala Tyr Leu Ala Gln
 185 190 195
 Ala Gly Leu Ala Arg Val Phe Ile Gly Ile Asn Asp Leu Glu Lys
 200 205 210
 Glu Gly Ala Phe Val Tyr Ser Asp His Ser Pro Met Arg Thr Phe
 215 220 225
 Asn Lys Trp Arg Ser Gly Glu Pro Asn Asn Ala Tyr Asp Glu Glu
 230 235 240
 Asp Cys Val Glu Met Val Ala Ser Gly Gly Trp Asn Asp Val Ala
 245 250 255
 Cys His Thr Thr Met Tyr Phe Met Cys Glu Phe Asp Lys Glu Asn
 260 265 270

Met

<210> 358
 <211> 972
 <212> DNA
 <213> Homo sapiens

<400> 358
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 gaggcaccgc agcaccagtg tgtgagggga gcaggcagcg gtcctagcca 100
 gttccttgat cctgccagac caccagccc cgggcacaga gctgctccac 150

aggcaccatg aggatcatgc tgctattcac agccatcctg gccttcagcc 200
 tagctcagag ctttggggct gtctgtaagg agccacagga ggagggtgtt 250
 cctggcgggg gccgcagcaa gagggatcca gatctctacc agctgctcca 300
 gagactcttc aaaagccact catctctgga gggattgctc aaagccctga 350
 gccaggctag cacagatcct aaggaatcaa catctcccg gaaacgtgac 400
 atgcatgact tctttgtggg acttatgggc aagaggagcg tccagccaga 450
 gggaaagaca ggacctttct taccttcagt gagggttcct cgcccccttc 500
 atcccaatca gcttgatcc acaggaaagt ctccctggg aacagaggag 550
 cagagacctt tataagactc tctacggat gtgaatcaa agaacgtccc 600
 cagctttggc atcctcaagt atcccccgag agcagaatag gtactccact 650
 tccggactcc tggactgcat taggaagacc tctttccctg tcccaatccc 700
 cagggtgcga cgctcctgtt accctttctc ttccctgttc ttgtaacatt 750
 cttgtgtctt gactccttct ccatcttttc tacctgaccc tgggtgtgaa 800
 actgcatagt gaatatcccc aaccccaatg ggcatgact gtagaatacc 850
 ctagagtccc tgtagtgtcc tacattaaaa atataatgct tctctctatt 900
 cctcaacaat aaaggatttt tgcatatgaa aaaaaaaaaa aaaaaaaaaa 950
 aaaaaaaaaa aaaaaaaaaa aa 972

<210> 359
 <211> 135
 <212> PRT
 <213> Homo sapiens

<400> 359
 Met Arg Ile Met Leu Leu Phe Thr Ala Ile Leu Ala Phe Ser Leu
 1 5 10 15
 Ala Gln Ser Phe Gly Ala Val Cys Lys Glu Pro Gln Glu Glu Val
 20 25 30
 Val Pro Gly Gly Arg Ser Lys Arg Asp Pro Asp Leu Tyr Gln
 35 40 45
 Leu Leu Gln Arg Leu Phe Lys Ser His Ser Ser Leu Glu Gly Leu
 50 55 60
 Leu Lys Ala Leu Ser Gln Ala Ser Thr Asp Pro Lys Glu Ser Thr
 65 70 75
 Ser Pro Glu Lys Arg Asp Met His Asp Phe Phe Val Gly Leu Met
 80 85 90
 Gly Lys Arg Ser Val Gln Pro Glu Gly Lys Thr Gly Pro Phe Leu
 95 100 105
 Pro Ser Val Arg Val Pro Arg Pro Leu His Pro Asn Gln Leu Gly
 110 115 120

Ser Thr Gly Lys Ser Ser Leu Gly Thr Glu Glu Gln Arg Pro Leu
125 130 135

<210> 360

<211> 1738

<212> DNA

<213> Homo sapiens

<400> 360

gggcgtctcc ggctgctcct attgagctgt ctgctcgtg tgcccgtgt 50
gcctgctgtg cccgcgtgt cgcgcgtgt accgcgtgt ctggacgcgg 100
gagacgccag cgagctggtg attggagccc tgcggagagc tcaagcggcc 150
agctctgccc caggagccca ggctgcccgg tagtcccat agttgctgca 200
ggagtggagc catgagctgc gtccctgggtg gtgtcatccc ctggggctg 250
ctgttctcgg tctcgggato ccaaggctac ctctcgccca acgtcactct 300
cttagaggag ctgctcagca aataccagca caacgagtct cactccgggg 350
tccgcagagc catccccagg gaggacaagg aggagatcct catgctgcac 400
aacaagcttc ggggccagggt gcagcctcag gcctccaaca tggagtacat 450
ggtgagcgcc ggctccggcc gcagaggctg gcaccggggg tggggccttg 500
gccaccagcc tgcctgttcc ccagccagc tctgttcccc agccagtgcg 550
tgtgatggct ggctcagggt ctctcttgcc aggggaggat cccggtctg 600
ttctgttttg ttgtttgtt ttgagacagg gtctcactct gcactgacg 650
ctggagtgca atggcacaat cgtcatgccc tgaacacctt gactccgggg 700
gttaagcgat cctgcttcag cctcccaagt agctggaact acaggcatgc 750
accatgggtc ccagctagat tttaaatatt ttgtggagat gggggctctg 800
ctacgttgcc caggctgggc ttgaactcct aggcctcaagc aatcctcctg 850
cctcagcctc tcaaagtgtc aggattatag gcatgagtca ccctgtctgg 900
ctctggctct gttcttaaca ttctgcaaaa acaacacacg tgggttcctc 950
gtgcagagcc tgctcgttg ccttcagtgc actcttggtg gctccactgg 1000
gaacacagct ctacgcttt ccacctgga ggcagagtgg ggagggggcc 1050
agggtgggc ttgtctgat ctgatctcag ctgtgccaca cgctagctgc 1100
accaccctga cttctcctta gcccggtgta gcctcacttt ccactggag 1150
agtccttctc cgcgtggttg ccatgactgt gagataagtc gaggctgta 1200
aggggccggc acagactgac ctgcctcccc aaccctagg ctttgctaac 1250
cgggaaagga gctaacggtg acagaagaca gccaaagtca accctccgg 1300
gtgatttgta tgggtgttcc aggtgtggtt gggcgatgct gctacttgac 1350

cccaagctcc agtgtggaaa cttccttcct ggtggtttt ccagaactac 1400
 agaggaatgg accacagtct tccagggtcc ctctcgtcc accaaccggg 1450
 agcctccacc ttggccatcc gtcagctatg aatggctttt taaacaaacc 1500
 cactgccag cctgggtaac atggtaaagc cccgtctcta caaaaaaacc 1550
 caagttagcc gggcatggtg gtgcgcacct gtagtccag ctgcagtggtg 1600
 actgagtggt aggtggaggt ggggggtggg agctgaggaa ggaggatcgc 1650
 ttgagcctgg gaagtcgagg ctgcagtgag ctgagattgc accactgcac 1700
 tccagcctgg gtgacagagc aagaccctgt ctcaaaaa 1738

<210> 361
 <211> 159
 <212> PRT
 <213> Homo sapiens

<400> 361
 Met Ser Cys Val Leu Gly Gly Val Ile Pro Leu Gly Leu Leu Phe
 1 5 10 15
 Leu Val Cys Gly Ser Gln Gly Tyr Leu Leu Pro Asn Val Thr Leu
 20 25 30
 Leu Glu Glu Leu Leu Ser Lys Tyr Gln His Asn Glu Ser His Ser
 35 40 45
 Arg Val Arg Arg Ala Ile Pro Arg Glu Asp Lys Glu Glu Ile Leu
 50 55 60
 Met Leu His Asn Lys Leu Arg Gly Gln Val Gln Pro Gln Ala Ser
 65 70 75
 Asn Met Glu Tyr Met Val Ser Ala Gly Ser Gly Arg Arg Gly Trp
 80 85 90
 His Arg Gly Trp Gly Leu Gly His Gln Pro Ala Leu Phe Pro Ser
 95 100 105
 Gln Leu Cys Ser Pro Ala Ser Ala Cys Asp Gly Trp Leu Arg Val
 110 115 120
 Ser Ser Gly Arg Gly Gly Ser Arg Leu Cys Ser Val Leu Phe Val
 125 130 135
 Cys Phe Glu Thr Gly Ser His Ser Ala Thr Asp Ala Gly Val Gln
 140 145 150
 Trp His Asn Arg His Ala Leu Lys Pro
 155

<210> 362
 <211> 422
 <212> DNA
 <213> Homo sapiens

<400> 362
 aaggagaggc caccgggact tcagtgctc ctccatccca ggagcgagc 50

ggccactatg gggctctgggc tgccccttgt cctcctcttg accctccttg 100
gcagctcaca tggaacaggg ccgggtatga ctttgcaact gaagctgaag 150
gagtcctttc tgacaaatto ctctatgag tccagcttcc tggaattgct 200
tgaaaagctc tgcctcctcc tccatctccc ttcagggaac agcgtcacc 250
tccaccatgc aagatctcaa caccatgttg tctgcaacac atgacagcca 300
ttgaagcctg tgtccttctt ggcccgggct tttgggcccgg ggatgcagga 350
ggcaggcccc gacctgtctt ttcagcaggc cccaccctc ctgagtggca 400
ataaataaaa ttcggtatgc tg 422

<210> 363
<211> 78
<212> PRT
<213> Homo sapiens

<400> 363
Met Gly Ser Gly Leu Pro Leu Val Leu Leu Leu Thr Leu Leu Gly
1 5 10 15
Ser Ser His Gly Thr Gly Pro Gly Met Thr Leu Gln Leu Lys Leu
20 25 30
Lys Glu Ser Phe Leu Thr Asn Ser Ser Tyr Glu Ser Ser Phe Leu
35 40 45
Glu Leu Leu Glu Lys Leu Cys Leu Leu Leu His Leu Pro Ser Gly
50 55 60
Thr Ser Val Thr Leu His His Ala Arg Ser Gln His His Val Val
65 70 75
Cys Asn Thr

<210> 364
<211> 826
<212> DNA
<213> Homo sapiens

<400> 364
aattgtatct gtgtaatgtt aaaacaaacg aaataaaaata gaaggaaaaa 50
ctttctgagt ttcaaaaaca acagactagt actctaaaga actctttaaa 100
acaattaaact gttaggattg cagttatgat tggatattat ttaattctgt 150
ttctgatgtg gggttcctcc actgtgttct gtgtgctatt aatatttacc 200
attgcagaag ctccatcoag tgttgaaaaat gaatgcttag tggatctgtg 250
cctcttacgc atagtgtaca aattatctgg agttcctaata caatgcagag 300
ttcccctccc ctccgattgt tctaaataat tgaagatgt ctgctgtgga 350
aaaaggcatg tatttaaatc tgtatgatto tcaaccatct ttagttggga 400
aaggctcctg aaagccaatg gaaatacttt tttttttctt tggcactaat 450

caagtgaagt ttaccttttc acttagtagg atgtgttgtt acgctagtaa 500
aatagaaac tgtgtttatt ctgaggtatt ttagaacaac cagccatcat 550
tttttttat gtgtgtgttc ttggctgtat tcataaatta tatatttttg 600
gctatcaaat attacttcat tcaatataaa taacaatagt agaagttgtt 650
tacttagata tgcctttctag ttgcattttc tcagcctatg taagactact 700
ttgttgtaat agcctttgaa attacagta ctgtctctct actatcttca 750
gattacttga ttcaaataaa ccaattatgt ttgtaattga tattaataaa 800
accagaataa aagttcatat ctaccc 826

<210> 365
<211> 67
<212> PRT
<213> Homo sapiens

<400> 365
Met Ile Gly Tyr Tyr Leu Ile Leu Phe Leu Met Trp Gly Ser Ser
1 5 10 15
Thr Val Phe Cys Val Leu Leu Ile Phe Thr Ile Ala Glu Ala Ser
20 25 30
Phe Ser Val Glu Asn Glu Cys Leu Val Asp Leu Cys Leu Leu Arg
35 40 45
Ile Cys Tyr Lys Leu Ser Gly Val Pro Asn Gln Cys Arg Val Pro
50 55 60
Leu Pro Ser Asp Cys Ser Lys
65

<210> 366
<211> 2475
<212> DNA
<213> Homo sapiens

<400> 366
gaggatttgc cacagcagcg gatagagcag gagagcacca cgggagccct 50
tgagacatcc ttgagaagag ccacagcata agagactgcc ctgcttggtg 100
ttttgcagga tgatggtggc ccttcgagga gcttctgcac tgctggttct 150
gttccttgca gcttttctgc ccccgccgca gtgtaccgac gaccagacca 200
tggtgcatta catctaccag cgttttcgag tcttgagaca agggctggaa 250
aaatgtaccc aagcaacgag ggcatacatt caagaattcc aagagttctc 300
aaaaataata tctgtcatgc tgggaagatg tcagacctac acaagtgaagt 350
acaagatgac agtgggtaac ttggcactga gagttgaacg tgccaacag 400
gagattgact acatacaata ccttcgagag gctgacgagt gcatcgtatc 450
agaggacaag acactggcag aaatgttgct ccaagaagct gaagaagaga 500

aaaagatccg gactctgctg aatgcaagct gtgacaacat gctgatgggc 550
 ataaagtctt tgaatatagt gaagaagatg atggacacac atggctcttg 600
 gatgaagat gctgtctata actctccaaa ggtgtactta ttaattggat 650
 ccagaaacaa cactgttttg gaatttgcaa acatacgggc attcatggag 700
 gataacacca agccagctcc ccggaagcaa atcctaacac ttctctggca 750
 gggaacaggc caagtgatct acaaaggttt tctattttt cataaccaag 800
 caacttctaa tgagataatc aaatataacc tgcagaagag gactgtggaa 850
 gatcgaatgc tgctccagc aggggtaggc cgagcattgg ttaccagca 900
 ctccccctca acttacattg acctggctgt ggatgagcat gggctctggg 950
 ccatccactc tgggccaggc acccatagcc atttggtct cacaagatt 1000
 gagccgggca cactgggagt ggagcattca tgggataccc catgcagaag 1050
 ccaggatgct gaagcctcat tctctgttg tggggttctc tatgtggtct 1100
 acagtactgg gggccagggc cctcatcgca tcacctgcat ctatgatcca 1150
 ctgggcacta tcagtgagga ggacttgccc aacttgttct tccccagag 1200
 accaagaagt cactccatga tccattacaa cccagagat aagcagctct 1250
 atgcctggaa tgaaggaaac cagatcattt acaactcca gacaagaga 1300
 aagctgcctc tgaagtaatg cattacagct gtgagaaaga gcactgtggc 1350
 tttgcaagct gttctacagg acagtgggc tatagccctc tcacaatata 1400
 gtatccctct aatcacacac aggaagagtg tgtagaagtg gaaataccta 1450
 tgctcctttt cccaaatgct actgccttag gtatcttcca agagcttaga 1500
 tgagagcata tcacaggaa agtttcaaca atgtccatta ctccccaaa 1550
 cctctggct ctcaaggatg accacattct gatacagcct acttcaagcc 1600
 ttttgttta ctgetccca gcaattactg taactctgcc atcttccctc 1650
 ccacaattag agttgtatgc cagccoctaa tattcaccac tggcttttct 1700
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 tttctttct ttttttgag acaaggctct actatgttg ccaggctggt 1850
 ctcaaatcc agagctcaag agatcctct gcctcagcct cctaagtacc 1900
 tgggattaca ggcattgtgc accacacctg gcttaaaaa ctatttctta 1950
 ttgaggttta acctctattt cccctagccc tgctcttcca ctaagcttg 2000
 tagatgtaat aataaagtga aaatattaac atttgaatat cgtttccag 2050
 gtgtggagtg ttgcacatc attgaattct cgtttcacct ttgtgaaca 2100

tgcacaagtc ttacagctg tcattctaga gtttagtgta gtaacacaat 2150
 tacaagtgta aagatacagc tagaaaatac tacaataccc atagtttttc 2200
 cattgcccaa ggaagcatca aatacgtatg ttgtgtcacc tactcttata 2250
 gtcaatgcgt tcacgtttc agcctaaaaa taatagtctg tcccttttagc 2300
 cagttttcat gtctgcacaa gacctttcaa taggcctttc aatgataat 2350
 tctccagaa aaccagtcta agggtagga ccccaactct agcctcctct 2400
 tgtcttgctg tctctgttt ctctctttct gctttaaatt caataaaagt 2450
 gacactgagc aaaaaaaaaa aaaaa 2475

<210> 367
 <211> 402
 <212> PRT
 <213> Homo sapiens

<400> 367
 Met Met Val Ala Leu Arg Gly Ala Ser Ala Leu Leu Val Leu Phe
 1 5 10 15
 Leu Ala Ala Phe Leu Pro Pro Pro Gln Cys Thr Gln Asp Pro Ala
 20 25 30
 Met Val His Tyr Ile Tyr Gln Arg Phe Arg Val Leu Glu Gln Gly
 35 40 45
 Leu Glu Lys Cys Thr Gln Ala Thr Arg Ala Tyr Ile Gln Glu Phe
 50 55 60
 Gln Glu Phe Ser Lys Asn Ile Ser Val Met Leu Gly Arg Cys Gln
 65 70 75
 Thr Tyr Thr Ser Glu Tyr Lys Ser Ala Val Gly Asn Leu Ala Leu
 80 85 90
 Arg Val Glu Arg Ala Gln Arg Glu Ile Asp Tyr Ile Gln Tyr Leu
 95 100 105
 Arg Glu Ala Asp Glu Cys Ile Val Ser Glu Asp Lys Thr Leu Ala
 110 115 120
 Glu Met Leu Leu Gln Glu Ala Glu Glu Thr Lys Lys Ile Arg Thr
 125 130 135
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 140 145 150
 Leu Lys Ile Val Lys Lys Met Met Asp Thr His Gly Ser Trp Met
 155 160 165
 Lys Asp Ala Val Tyr Asn Ser Pro Lys Val Tyr Leu Leu Ile Gly
 170 175 180
 Ser Arg Asn Asn Thr Val Trp Glu Phe Ala Asn Ile Arg Ala Phe
 185 190 195
 Met Glu Asp Asn Thr Lys Pro Ala Pro Arg Lys Gln Ile Leu Thr
 200 205 210

Leu Ser Trp Gln Gly Thr Gly Gln Val Ile Tyr Lys Gly Phe Leu
 215 225
 Phe Phe His Asn Gln Ala Thr Ser Asn Glu Ile Ile Lys Tyr Asn
 230 235 240
 Leu Gln Lys Arg Thr Val Glu Asp Arg Met Leu Leu Pro Gly Gly
 245 250 255
 Val Gly Arg Ala Leu Val Tyr Gln His Ser Pro Ser Thr Tyr Ile
 260 265 270
 Asp Leu Ala Val Asp Glu His Gly Leu Trp Ala Ile His Ser Gly
 275 280 285
 Pro Gly Thr His Ser His Leu Val Leu Thr Lys Ile Glu Pro Gly
 290 295 300
 Thr Leu Gly Val Glu His Ser Trp Asp Thr Pro Cys Arg Ser Gln
 305 310 315
 Asp Ala Glu Ala Ser Phe Leu Leu Cys Gly Val Leu Tyr Val Val
 320 325 330
 Tyr Ser Thr Gly Gly Gln Gly Pro His Arg Ile Thr Cys Ile Tyr
 335 340 345
 Asp Pro Leu Gly Thr Ile Ser Glu Glu Asp Leu Pro Asn Leu Phe
 350 355 360
 Phe Pro Lys Arg Pro Arg Ser His Ser Met Ile His Tyr Asn Pro
 365 370 375
 Arg Asp Lys Gln Leu Tyr Ala Trp Asn Glu Gly Asn Gln Ile Ile
 380 385 390
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 395 400

<210> 368
 <211> 2281
 <212> DNA
 <213> Homo sapiens

<400> 368
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 ctgacaaatc ttcgggatcc aagaagcaga aacaatatca gcgatttcgg 250
 aaggagaagc ctcaacaaca caacttcacc caccgcctcc tggctgcagc 300
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<210> 369

<211> 447

<212> PRT

<213> Homo sapiens

<400> 369

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Glu | Leu | Ser | Gln | Met | Ser | Glu | Leu | Met | Gly | Leu | Ser | Val | Leu |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Leu | Gly | Leu | Leu | Ala | Leu | Met | Ala | Thr | Ala | Ala | Val | Ala | Arg | Gly |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Trp | Leu | Arg | Ala | Gly | Glu | Glu | Arg | Ser | Gly | Arg | Pro | Ala | Cys | Gln |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Lys | Ala | Asn | Gly | Phe | Pro | Pro | Asp | Lys | Ser | Ser | Gly | Ser | Lys | Lys |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gln | Lys | Gln | Tyr | Gln | Arg | Ile | Arg | Lys | Glu | Lys | Pro | Gln | Gln | His |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Asn | Phe | Thr | His | Arg | Leu | Leu | Ala | Ala | Ala | Leu | Lys | Ser | His | Ser |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Gly | Asn | Ile | Ser | Cys | Met | Asp | Phe | Ser | Ser | Asn | Gly | Lys | Tyr | Leu |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ala | Thr | Cys | Ala | Asp | Asp | Arg | Thr | Ile | Arg | Ile | Trp | Ser | Thr | Lys |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Asp | Phe | Leu | Gln | Arg | Glu | His | Arg | Ser | Met | Arg | Ala | Asn | Val | Glu |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Leu | Asp | His | Ala | Thr | Leu | Val | Arg | Phe | Ser | Pro | Asp | Cys | Arg | Ala |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Phe | Ile | Val | Trp | Leu | Ala | Asn | Gly | Asp | Thr | Leu | Arg | Val | Phe | Lys |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Met | Thr | Lys | Arg | Glu | Asp | Gly | Gly | Tyr | Thr | Phe | Thr | Ala | Thr | Pro |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Glu | Asp | Phe | Pro | Lys | Lys | His | Lys | Ala | Pro | Val | Ile | Asp | Ile | Gly |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Ile | Ala | Asn | Thr | Gly | Lys | Phe | Ile | Met | Thr | Ala | Ser | Ser | Asp | Thr |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Thr | Val | Leu | Ile | Trp | Ser | Leu | Lys | Gly | Gln | Val | Leu | Ser | Thr | Ile |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Asn | Thr | Asn | Gln | Met | Asn | Asn | Thr | His | Ala | Ala | Val | Ser | Pro | Cys |
| | | | | 230 | | | | | 235 | | | | | 240 |

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gly | Arg | Phe | Val | Ala | Ser | Cys | Gly | Phe | Thr | Pro | Asp | Val | Lys | Val | 245 | 250 | 255 |
| Trp | Glu | Val | Cys | Phe | Gly | Lys | Lys | Gly | Glu | Phe | Gln | Glu | Val | Val | 260 | 265 | 270 |
| Arg | Ala | Phe | Glu | Leu | Lys | Gly | His | Ser | Ala | Ala | Val | His | Ser | Phe | 275 | 280 | 285 |
| Ala | Phe | Ser | Asn | Asp | Ser | Arg | Arg | Met | Ala | Ser | Val | Ser | Lys | Asp | 290 | 295 | 300 |
| Gly | Thr | Trp | Lys | Leu | Trp | Asp | Thr | Asp | Val | Glu | Tyr | Lys | Lys | Lys | 305 | 310 | 315 |
| Gln | Asp | Pro | Tyr | Leu | Leu | Lys | Thr | Gly | Arg | Phe | Glu | Glu | Ala | Ala | 320 | 325 | 330 |
| Gly | Ala | Ala | Pro | Cys | Arg | Leu | Ala | Leu | Ser | Pro | Asn | Ala | Gln | Val | 335 | 340 | 345 |
| Leu | Ala | Leu | Ala | Ser | Gly | Ser | Ser | Ile | His | Leu | Tyr | Asn | Thr | Arg | 350 | 355 | 360 |
| Arg | Gly | Glu | Lys | Glu | Glu | Cys | Phe | Glu | Arg | Val | His | Gly | Glu | Cys | 365 | 370 | 375 |
| Ile | Ala | Asn | Leu | Ser | Phe | Asp | Ile | Thr | Gly | Arg | Phe | Leu | Ala | Ser | 380 | 385 | 390 |
| Cys | Gly | Asp | Arg | Ala | Val | Arg | Leu | Phe | His | Asn | Thr | Pro | Gly | His | 395 | 400 | 405 |
| Arg | Ala | Met | Val | Glu | Glu | Met | Gln | Gly | His | Leu | Lys | Arg | Ala | Ser | 410 | 415 | 420 |
| Asn | Glu | Ser | Thr | Arg | Gln | Arg | Leu | Gln | Gln | Gln | Leu | Thr | Gln | Ala | 425 | 430 | 435 |
| Gln | Glu | Thr | Leu | Lys | Ser | Leu | Gly | Ala | Leu | Lys | Lys | | | | 440 | 445 | |

<210> 370

<211> 1415

<212> DNA

<213> Homo sapiens

<400> 370

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 ccacgcgagt ctcaatcatg ctctcctag taactgtgtc tgactgtgct 150
 gtgatcacag gggcctgtga gcgggatgtc cagtgtgggg caggcacctg 200
 ctgtgccatc agcctgtggc ttcgagggtc gcggatgtgc accccgctgg 250
 ggcggaagag cgaggagtgc caccgccgca gccacaaggt ccccttcttc 300
 aggaacacga agcaccacac ctgtccttgc ttgcccaacc tgctgtgctc 350
 caggttcccc gacggcaggt accgctgtgc catggacttg aagaacatca 400

atttttaggc gottgctggtg tctcaggata cccaccatcc ttttctgag 450
 cacagcctgg atttttattt ctgccatgaa acccagctcc catgactctc 500
 ccagtcctca cactgactac cctgatctct ctgtctagt acgcacatat 550
 gcacacaggc agacatacct cccatcatga catggtcccc agcctggcct 600
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 tgggttaactc cttagtttca gaccacagac tcaagattgg ctcttcccag 950
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 aatcagcccc ctgaagactc tggctccagt cagcctgtgg cttgtggcct 1050
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 cattaaaatg caaatggtgg tgggtcaatc taatctgata ttgacatatt 1200
 agaaggcaat tagggtgttt ccttaaaca ctcctttcca aggtacagcc 1250
 ctgagagcag gttggtgact ttgaggaggg cagtcctctg tccagattgg 1300
 ggtggggaca agggacaggg agcaggggcag gggctgaaa gggcactgat 1350
 tcagaccagg gaggcaacta cacaccaaca tgctggcttt agaataaaaag 1400
 caccaactga aaaaa 1415

<210> 371
 <211> 105
 <212> FRT
 <213> Homo sapiens

<400> 371
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 Val Ser Asp Cys Ala Val Ile Thr Gly Ala Cys Glu Arg Asp Val
 20 25 30
 Gln Cys Gly Ala Gly Thr Cys Cys Ala Ile Ser Leu Trp Leu Arg
 35 40 45
 Gly Leu Arg Met Cys Thr Pro Leu Gly Arg Glu Gly Glu Glu Cys
 50 55 60
 His Pro Gly Ser His Lys Val Pro Phe Phe Arg Lys Arg Lys His
 65 70 75

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Thr | Cys | Pro | Cys | Leu | Pro | Asn | Leu | Leu | Cys | Ser | Arg | Phe | Pro |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Asp | Gly | Arg | Tyr | Arg | Cys | Ser | Met | Asp | Leu | Lys | Asn | Ile | Asn | Phe |
| | | | | 95 | | | | | 100 | | | | | 105 |

<210> 372
 <211> 1281
 <212> DNA
 <213> Homo sapiens

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 cattgggtgca ggagccctgg gggctgctgc ctggcattg ctgcttgcca 150
 acacagacgt gtttctgtcc aagcccaga aagcgccctt ggagtacctg 200
 gaggatatag acctgaaaao actggagaag gaaccaagga ctttcaaagc 250
 aaaggagcta tgggaaaaaa atggagctgt gattatggcc gtgcggaggc 300
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 agcatgttgg accagctggg cgtcccccct tatgcagtgg taaaggagca 400
 catcaggact gaagtgaagg atttccagcc ttatttcaaa ggagaaatct 450
 tcttgatga aaagaaaaag ttctatggct cacaaggagg gaagatgatg 500
 ttatgggat ttatocgtct gggagtgtgg tacaactctt tccgagcctg 550
 gaacggaggc ttctctgga accctggaagg agaaggcttc atccttgggg 600
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 gaaaaagaat ttggagacaa agtaaaccta ctttctgttc tggaagctgc 700
 taagatgac aaaccacaga ctttggcctc agagaaaaaa tgattgtgtg 750
 aaactgcoca gctcagggat aaccagggac attcacctgt gttcatggga 800
 tgtattgttt ccaactcgtgt cactaaggag tgagaaaccc atttatactc 850
 tactctcagt atggattatt aatgtatctt aatattctgt tagggccac 900
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 caggctgggt gcagtggctc acacctgtaa tcccagcact ttgggaggcc 1050
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 atggcgaaac ccgctctcta ctaaaaatac aaaaatcacc cgggtgtggt 1150
 ggcaggcacc ttagtccca gctaccgggg aggctgaggc aggagaatca 1200
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<210> 373
 <211> 229
 <212> PRT
 <213> Homo sapiens

<400> 373

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          20          25          30

Leu Ala Asn Thr Asp Val Phe Leu Ser Lys Pro Gln Lys Ala Ala
          35          40          45

Leu Glu Tyr Leu Glu Asp Ile Asp Leu Lys Thr Leu Glu Lys Glu
          50          55          60

Pro Arg Thr Phe Lys Ala Lys Glu Leu Trp Glu Lys Asn Gly Ala
          65          70          75

Val Ile Met Ala Val Arg Arg Pro Gly Cys Phe Leu Cys Arg Glu
          80          85          90

Glu Ala Ala Asp Leu Ser Ser Leu Lys Ser Met Leu Asp Gln Leu
          95          100          105

Gly Val Pro Leu Tyr Ala Val Val Lys Glu His Ile Arg Thr Glu
          110          115          120

Val Lys Asp Phe Gln Pro Tyr Phe Lys Gly Glu Ile Phe Leu Asp
          125          130          135

Glu Lys Lys Lys Phe Tyr Gly Pro Gln Arg Arg Lys Met Met Phe
          140          145          150

Met Gly Phe Ile Arg Leu Gly Val Trp Tyr Asn Phe Phe Arg Ala
          155          160          165

Trp Asn Gly Gly Phe Ser Gly Asn Leu Glu Gly Glu Gly Phe Ile
          170          175          180

Leu Gly Gly Val Phe Val Val Gly Ser Gly Lys Gln Gly Ile Leu
          185          190          195

Leu Glu His Arg Glu Lys Glu Phe Gly Asp Lys Val Asn Leu Leu
          200          205          210

Ser Val Leu Glu Ala Ala Lys Met Ile Lys Pro Gln Thr Leu Ala
          215          220          225

Ser Glu Lys Lys
  
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<210> 374
 <211> 744
 <212> DNA
 <213> Homo sapiens

<400> 374

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gcggtaggag gggcgagcgc gagaagcccc ttctcggcg ctgccaaccc 150
 gccaccacgc ccatggcgaa ccccgggctg gggctgcttc tggcgctggg 200
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<210> 375
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 375
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 Thr Ser Ala Asn Glu Asn Ser Thr Val Leu Pro Ser Ser Thr Ser
 35 40 45
 Ser Ser Ser Asp Gly Asn Leu Arg Pro Glu Ala Ile Thr Ala Ile
 50 55 60
 Ile Val Val Phe Ser Leu Leu Ala Ala Leu Leu Leu Ala Val Gly
 65 70 75
 Leu Ala Leu Leu Val Arg Lys Leu Arg Glu Lys Arg Gln Thr Glu
 80 85 90
 Gly Thr Tyr Arg Pro Ser Ser Glu Glu Gln Phe Ser His Ala Ala
 95 100 105
 Glu Ala Arg Ala Pro Gln Asp Ser Lys Glu Thr Val Gln Gly Cys
 110 115 120
 Leu Pro Ile

<210> 376
 <211> 713
 <212> DNA
 <213> Homo sapiens

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 ccagaagatg aaaaaataat tgaacaaata gaggatatgg tgactacagc 200
 ttctacgtac ctgtttgaag ccacagaaaa aagatttttt ttcaaaaatg 250
 tatctatatt aattcctgag aattggaagg aaaatcccta gtacaaaagg 300
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 actcccaggt agagatgaac catacaccia gcagttcaca gaatgtggag 400
 agaaaggcga atacattcac ttcaacctg acctctact tggaaaaaaa 450
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 ggtagaaata gagtttataa gtgtcaagga ggcagctgtc ttagtagagc 650
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 tgtttcagat gaagctcaga acaatggcct cattgatgct tttggggctc 1450
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<213> Homo sapiens

<400> 379

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| Leu | His | Gln | Ser | Asn | 20 | Thr | Ser | Phe | Ile | Lys | Leu | Asn | Asn | Asn | Gly | 30 |
| Phe | Glu | Asp | Ile | Val | 35 | Ile | Val | Ile | Asp | Pro | Ser | Val | Pro | Glu | Asp | 45 |
| Glu | Lys | Ile | Ile | Glu | 50 | Gln | Ile | Glu | Asp | Met | Val | Thr | Thr | Ala | Ser | 60 |
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| Val | Ser | Ile | Leu | Ile | 80 | Pro | Glu | Asn | Trp | Lys | Glu | Asn | Pro | Gln | Tyr | 90 |
| Lys | Arg | Pro | Lys | His | 95 | Glu | Asn | His | Lys | His | Ala | Asp | Val | Ile | Val | 105 |
| Ala | Pro | Pro | Thr | Leu | 110 | Pro | Gly | Arg | Asp | Glu | Pro | Tyr | Thr | Lys | Gln | 120 |
| Phe | Thr | Glu | Cys | Gly | 125 | Glu | Lys | Gly | Glu | Tyr | Ile | His | Phe | Thr | Pro | 135 |
| Asp | Leu | Leu | Leu | Gly | 140 | Lys | Lys | Gln | Asn | Glu | Tyr | Gly | Pro | Pro | Gly | 150 |
| Lys | Leu | Phe | Val | His | 155 | Glu | Trp | Ala | His | Leu | Arg | Trp | Gly | Val | Phe | 165 |
| Asp | Glu | Tyr | Asn | Glu | 170 | Asp | Gln | Pro | Phe | Tyr | Arg | Ala | Lys | Ser | Lys | 180 |
| Lys | Ile | Glu | Ala | Thr | 185 | Arg | Cys | Ser | Ala | Gly | Ile | Ser | Gly | Arg | Asn | 195 |
| Arg | Val | Tyr | Lys | Cys | 200 | Gln | Gly | Gly | Ser | Cys | Leu | Ser | Arg | Ala | Cys | 210 |
| Arg | Ile | Asp | Ser | Thr | 215 | Thr | Lys | Leu | Tyr | Gly | Lys | Asp | Cys | Gln | Phe | 225 |
| Phe | Pro | Asp | Lys | Val | 230 | Gln | Thr | Glu | Lys | Ala | Ser | Ile | Met | Phe | Met | 240 |
| Gln | Ser | Ile | Asp | Ser | 245 | Val | Val | Glu | Phe | Cys | Asn | Glu | Lys | Thr | His | 255 |
| Asn | Gln | Glu | Ala | Pro | 260 | Ser | Leu | Gln | Asn | Ile | Lys | Cys | Asn | Phe | Arg | 270 |
| Ser | Thr | Trp | Glu | Val | | Ile | Ser | Asn | Ser | Glu | Asp | Phe | Lys | Asn | Thr | |

| | | | | | |
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| Lys Ile Ser Gln Arg | 305 | Ile Val Cys Leu | Val Leu Asp Lys Ser | Gly | 315 |
| Ser Met Gly Gly Lys | 320 | Asp Arg Leu Asn | Arg Met Asn Gln Ala | Ala | 330 |
| Lys His Phe Leu Leu | 335 | Gln Thr Val Glu | Asn Gly Ser Trp Val | Gly | 345 |
| Met Val His Phe Asp | 350 | Ser Thr Ala Thr | Ile Val Asn Lys Leu | Ile | 360 |
| Gln Ile Lys Ser Ser | 365 | Asp Glu Arg Asn | Thr Leu Met Ala Gly | Leu | 375 |
| Pro Thr Tyr Pro Leu | 380 | Gly Gly Thr Ser | Ile Cys Ser Gly Ile | Lys | 390 |
| Tyr Ala Phe Gln Val | 395 | Ile Gly Glu Leu | His Ser Gln Leu Asp | Gly | 405 |
| Ser Glu Val Leu Leu | 410 | Leu Thr Asp Gly | Glu Asp Asn Thr Ala | Ser | 420 |
| Ser Cys Ile Asp Glu | 425 | Val Lys Gln Ser | Gly Ala Ile Val His | Phe | 435 |
| Ile Ala Leu Gly Arg | 440 | Ala Ala Asp Glu | Ala Val Ile Glu Met | Ser | 450 |
| Lys Ile Thr Gly Gly | 455 | Ser His Phe Tyr | Val Ser Asp Glu Ala | Gln | 465 |
| Asn Asn Gly Leu Ile | 470 | Asp Ala Phe Gly | Ala Leu Thr Ser Gly | Asn | 480 |
| Thr Asp Leu Ser Gln | 485 | Lys Ser Leu Gln | Leu Glu Ser Lys Gly | Leu | 495 |
| Thr Leu Asn Ser Asn | 500 | Ala Trp Met Asn | Asp Thr Val Ile Ile | Asp | 510 |
| Ser Thr Val Gly Lys | 515 | Asp Thr Phe Phe | Leu Ile Thr Trp Asn | Ser | 525 |
| Leu Pro Pro Ser Ile | 530 | Ser Leu Trp Asp | Pro Ser Gly Thr Ile | Met | 540 |
| Glu Asn Phe Thr Val | 545 | Asp Ala Thr Ser | Lys Met Ala Tyr Leu | Ser | 555 |
| Ile Pro Gly Thr Ala | 560 | Lys Val Gly Thr | Trp Ala Tyr Asn Leu | Gln | 570 |
| Ala Lys Ala Asn Pro | 575 | Glu Thr Leu Thr | Ile Thr Val Thr Ser | Arg | 585 |
| Ala Ala Asn Ser Ser | | Val Pro Pro Ile | Thr Val Asn Ala Lys | Met | |

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| Asn | Lys | Asp | Val | Asn | Ser | Phe | Pro | Ser | Pro | Met | Ile | Val | Tyr | Ala | 605 |
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| Ala | Phe | Ile | Glu | Ser | Gln | Asn | Gly | His | Thr | Glu | Val | Leu | Glu | Leu | 615 |
| Leu | Asp | Asn | Gly | Ala | Gly | Ala | Asp | Ser | Phe | Lys | Asn | Asp | Gly | Val | 620 |
| Tyr | Ser | Arg | Tyr | Phe | Thr | Ala | Tyr | Thr | Glu | Asn | Gly | Arg | Tyr | Ser | 625 |
| Leu | Lys | Val | Arg | Ala | His | Gly | Gly | Ala | Asn | Thr | Ala | Arg | Leu | Lys | 630 |
| Leu | Arg | Pro | Pro | Leu | Asn | Arg | Ala | Ala | Tyr | Ile | Pro | Gly | Trp | Val | 635 |
| Val | Asn | Gly | Glu | Ile | Glu | Ala | Asn | Pro | Pro | Arg | Pro | Glu | Ile | Asp | 640 |
| Glu | Asp | Thr | Gln | Thr | Thr | Leu | Glu | Asp | Phe | Ser | Arg | Thr | Ala | Ser | 645 |
| Gly | Gly | Ala | Phe | Val | Val | Ser | Gln | Val | Pro | Ser | Leu | Pro | Leu | Pro | 650 |
| Asp | Gln | Tyr | Pro | Pro | Ser | Gln | Ile | Thr | Asp | Leu | Asp | Ala | Thr | Val | 655 |
| His | Glu | Asp | Lys | Ile | Ile | Leu | Thr | Trp | Thr | Ala | Pro | Gly | Asp | Asn | 660 |
| Phe | Asp | Val | Gly | Lys | Val | Gln | Arg | Tyr | Ile | Ile | Arg | Ile | Ser | Ala | 665 |
| Ser | Ile | Leu | Asp | Leu | Arg | Asp | Ser | Phe | Asp | Asp | Ala | Leu | Gln | Val | 670 |
| Asn | Thr | Thr | Asp | Leu | Ser | Pro | Lys | Glu | Ala | Asn | Ser | Lys | Glu | Ser | 675 |
| Phe | Ala | Phe | Lys | Pro | Glu | Asn | Ile | Ser | Glu | Glu | Asn | Ala | Thr | His | 680 |
| Ile | Phe | Ile | Ala | Ile | Lys | Ser | Ile | Asp | Lys | Ser | Asn | Leu | Thr | Ser | 685 |
| Lys | Val | Ser | Asn | Ile | Ala | Gln | Val | Thr | Leu | Phe | Ile | Pro | Gln | Ala | 690 |
| Asn | Pro | Asp | Asp | Ile | Asp | Pro | Thr | Pro | Thr | Pro | Thr | Pro | Thr | Pro | 695 |
| Thr | Pro | Asp | Lys | Ser | His | Asn | Ser | Gly | Val | Asn | Ile | Ser | Thr | Leu | 700 |
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 Leu Gln Glu Trp Glu Glu Gln His Arg Asn Tyr Val Ser Ser Leu
 65 70 75
 Lys Arg Gln Ile Ala Gln Leu Lys Glu Glu Leu Gln Glu Arg Ser
 80 85 90

| | | | | | | | | | | | | | | | |
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| Glu | Gln | Leu | Arg | Asn | Gly | Gln | Tyr | Gln | Ala | Ser | Asp | Ala | Ala | Gly | |
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| Leu | Gly | Leu | Asp | Arg | Ser | Pro | Pro | Glu | Lys | Thr | Gln | Ala | Asp | Leu | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Leu | Ala | Phe | Leu | His | Ser | Gln | Val | Asp | Lys | Ala | Glu | Val | Asn | Ala | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Val | Lys | Leu | Ala | Thr | Glu | Tyr | Ala | Ala | Val | Pro | Phe | Asp | Ser | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Phe | Thr | Leu | Gln | Lys | Val | Tyr | Gln | Leu | Glu | Thr | Gly | Leu | Thr | Arg | |
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| His | Pro | Glu | Glu | Lys | Pro | Val | Arg | Lys | Asp | Lys | Arg | Asp | Glu | Leu | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Val | Glu | Ala | Ile | Glu | Ser | Ala | Leu | Glu | Thr | Leu | Asn | Asn | Pro | Ala | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Glu | Asn | Ser | Pro | Asn | His | Arg | Pro | Tyr | Thr | Ala | Ser | Asp | Phe | Ile | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Glu | Gly | Ile | Tyr | Arg | Thr | Glu | Arg | Asp | Lys | Gly | Thr | Leu | Tyr | Glu | |
| | | | | 215 | | | | | 220 | | | | | 225 | |
| Leu | Thr | Phe | Lys | Gly | Asp | His | Lys | His | Glu | Phe | Lys | Arg | Leu | Ile | |
| | | | | 230 | | | | | 235 | | | | | 240 | |
| Leu | Phe | Arg | Pro | Phe | Ser | Pro | Ile | Met | Lys | Val | Lys | Asn | Glu | Lys | |
| | | | | 245 | | | | | 250 | | | | | 255 | |
| Leu | Asn | Met | Ala | Asn | Thr | Leu | Ile | Asn | Val | Ile | Val | Pro | Leu | Ala | |
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| Lys | Arg | Val | Asp | Lys | Phe | Arg | Gln | Phe | Met | Gln | Asn | Phe | Arg | Glu | |
| | | | | 275 | | | | | 280 | | | | | 285 | |
| Met | Cys | Ile | Glu | Gln | Asp | Gly | Arg | Val | His | Leu | Thr | Val | Val | Tyr | |
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| Phe | Gly | Lys | Glu | Glu | Ile | Asn | Glu | Val | Lys | Gly | Ile | Leu | Glu | Asn | |
| | | | | 305 | | | | | 310 | | | | | 315 | |
| Thr | Ser | Lys | Ala | Ala | Asn | Phe | Arg | Asn | Phe | Thr | Phe | Ile | Gln | Leu | |
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| Asn | Gly | Glu | Phe | Ser | Arg | Gly | Lys | Gly | Leu | Asp | Val | Gly | Ala | Arg | |
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| Ile | Tyr | Phe | Thr | Ser | Glu | Phe | Leu | Asn | Thr | Cys | Arg | Leu | Asn | Thr | |
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| Gln | Pro | Gly | Lys | Lys | Val | Phe | Tyr | Pro | Val | Leu | Phe | Ser | Gln | Tyr | |
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| Asn | Pro | Gly | Ile | Ile | Tyr | Gly | His | His | Asp | Ala | Val | Pro | Pro | Leu | |
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tagtgtataa atgtggatcat gtggtatttg tagttattga ttttaagcatt 950

tttagaataa agatcaggca tatgtatata ttttcacact tcaagagcct 1000

aaggaaaaat aaattttcca gtggagaata catataatat ggtgtagaaa 1050

tcattgaaaa tggatccttt ttgacgatca cttatatcac tctgtatatg 1100

actaagtaaa caaaagttag aagtaattat tgtaaatgga tggataaaaa 1150

tgggaattact catatacagg gtggaatttt atcctgttat cacaccaaca 1200

gttgattata ttttttctga atatcagccc ctaataggac aattctattt 1250

gttgaccatt tctacaattt gtaaaagtcc aatctgtgct aacttaataa 1300
 agtaataatc atctcttttt aaaaaaaaaa aaaaaaaaaa aaaaaa 1346

<210> 387
 <211> 212
 <212> PRT
 <213> Homo sapiens

<400> 387
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 1 5 10
 Leu Cys Gln Pro Gly Ala Glu Asn Ala Phe Lys Val Arg Leu Ser
 20 25 30
 Ile Arg Thr Ala Leu Gly Asp Lys Ala Tyr Ala Trp Asp Thr Asn
 35 40 45
 Glu Glu Tyr Leu Phe Lys Ala Met Val Ala Phe Ser Met Arg Lys
 50 55 60
 Val Pro Asn Arg Glu Ala Thr Glu Ile Ser His Val Leu Leu Cys
 65 70 75
 Asn Val Thr Gln Arg Val Ser Phe Trp Phe Val Val Thr Asp Pro
 80 85 90
 Ser Lys Asn His Thr Leu Pro Ala Val Glu Val Gln Ser Ala Ile
 95 100 105
 Arg Met Asn Lys Asn Arg Ile Asn Asn Ala Phe Phe Leu Asn Asp
 110 115 120
 Gln Thr Leu Glu Phe Leu Lys Ile Pro Ser Thr Leu Ala Pro Pro
 125 130 135
 Met Asp Pro Ser Val Pro Ile Trp Ile Ile Ile Phe Gly Val Ile
 140 145 150
 Phe Cys Ile Ile Ile Val Ala Ile Ala Leu Leu Ile Leu Ser Gly
 155 160 165
 Ile Trp Gln Arg Arg Arg Lys Asn Lys Glu Pro Ser Glu Val Asp
 170 175 180
 Asp Ala Glu Asp Lys Cys Glu Asn Met Ile Thr Ile Glu Asn Gly
 185 190 195
 Ile Pro Ser Asp Pro Leu Asp Met Lys Gly Gly Ile Leu Met Met
 200 205 210

Pro Ser

<210> 388
 <211> 1371
 <212> DNA
 <213> Homo sapiens

<400> 388
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 gccaaaggctg ggtttccctc atgtatggca agagctctac tcgtgcgggtg 150
 cttctctctcc ttggcataca gctcacagct ctttggccta tagcagctgt 200
 ggaaatttat acctccggg tgctggaggc tgttaattgg acagatgctc 250
 ggttaaaatg cactttctcc agctttgccc ctgtgggtga tgccttaaca 300
 gtgacctgga attttcgtcc tctagacggg ggacctgagc agtttgatt 350
 ctactaccac atagatccct tccaacccat gagtggcggt tttaaggacc 400
 ggggtgtctt ggatgggaat cctgagcggg acgatgcctc catccttctc 450
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 cccacctgat gttgatggg tgatagggga gatccggctc agcgtcgtgc 550
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 gcctgtgacg tgatgatcat aatagtaatt gtatgggtcc tcttccagca 650
 ttaccggaaa aagcgatggg ccgaaagagc tcataaagg gtggagataa 700
 aatcaaaaga agaggaaagg ctcaaccaag agaaaaagg ctctgtttat 750
 ttagaagaca cagactaaca atttttagtg gaagctgaga tgatttccaa 800
 gaacaagaac cctagtattt cttgaagtta atggaactt tcttttggt 850
 tttccagttg tgacctgtt tccaaccagt tctgcagcat attagattct 900
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 gtcatacaca gctcattat taaggtctta ttttaattca gagtgtaaat 1000
 ttttcaagt gctcattag ttttataaac aagaagctac atttttgccc 1050
 ttaagacact acttacagtg ttatgacttg tatacacata tattgggtac 1100
 aaaggggata aaagccaatt tgtctgttac atttcttcc acgtatttct 1150
 tttagcagca cttctgttac taaagttaat gtgtttactc tcttctctc 1200
 ccacattctc aattaaaagg tgagctaagc ctctcgggtg tttctgatta 1250
 acagttaaac ctaaaattca actgttaaat gacattttta tttttatgtc 1300
 tctcttaac tatgagacac atctgtttt actgaatttc tttcaatatt 1350
 ccaggtgata gatttttctc g 1371

<210> 389

<211> 215

<212> PRT

<213> Homo sapiens

<400> 389

Met Tyr Gly Lys Ser Ser Thr Arg Ala Val Leu Leu Leu Leu Gly

1

5

10

15

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Ile | Gln | Leu | Thr | Ala | Leu | Trp | Pro | Ile | Ala | Ala | Val | Glu | Ile | Tyr | |
| | | | | 20 | | | | | 25 | | | | | 30 | |
| Thr | Ser | Arg | Val | Leu | Glu | Ala | Val | Asn | Gly | Thr | Asp | Ala | Arg | Leu | |
| | | | | 35 | | | | | 40 | | | | | 45 | |
| Lys | Cys | Thr | Phe | Ser | Ser | Phe | Ala | Pro | Val | Gly | Asp | Ala | Leu | Thr | |
| | | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Thr | Trp | Asn | Phe | Arg | Pro | Leu | Asp | Gly | Gly | Pro | Glu | Gln | Phe | |
| | | | | 65 | | | | | 70 | | | | | 75 | |
| Val | Phe | Tyr | Tyr | His | Ile | Asp | Pro | Phe | Gln | Pro | Met | Ser | Gly | Arg | |
| | | | | 80 | | | | | 85 | | | | | 90 | |
| Phe | Lys | Asp | Arg | Val | Ser | Trp | Asp | Gly | Asn | Pro | Glu | Arg | Tyr | Asp | |
| | | | | 95 | | | | | 100 | | | | | 105 | |
| Ala | Ser | Ile | Leu | Leu | Trp | Lys | Leu | Gln | Phe | Asp | Asp | Asn | Gly | Thr | |
| | | | | 110 | | | | | 115 | | | | | 120 | |
| Tyr | Thr | Cys | Gln | Val | Lys | Asn | Pro | Pro | Asp | Val | Asp | Gly | Val | Ile | |
| | | | | 125 | | | | | 130 | | | | | 135 | |
| Gly | Glu | Ile | Arg | Leu | Ser | Val | Val | His | Thr | Val | Arg | Phe | Ser | Glu | |
| | | | | 140 | | | | | 145 | | | | | 150 | |
| Ile | His | Phe | Leu | Ala | Leu | Ala | Ile | Gly | Ser | Ala | Cys | Ala | Leu | Met | |
| | | | | 155 | | | | | 160 | | | | | 165 | |
| Ile | Ile | Ile | Val | Ile | Val | Val | Val | Leu | Phe | Gln | His | Tyr | Arg | Lys | |
| | | | | 170 | | | | | 175 | | | | | 180 | |
| Lys | Arg | Trp | Ala | Glu | Arg | Ala | His | Lys | Val | Val | Glu | Ile | Lys | Ser | |
| | | | | 185 | | | | | 190 | | | | | 195 | |
| Lys | Glu | Glu | Glu | Arg | Leu | Asn | Gln | Glu | Lys | Lys | Val | Ser | Val | Tyr | |
| | | | | 200 | | | | | 205 | | | | | 210 | |
| Leu | Glu | Asp | Thr | Asp | | | | | | | | | | | |
| | | | | 215 | | | | | | | | | | | |

<210> 390

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 390

ccgaggccat ctagaggcca gagc 24

<210> 391

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic oligonucleotide probe

<400> 391

acaggcagag ccaatggcca gagc 24

<210> 392
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 392
gagaggactg cgggagtttg ggacctttgt gcagacgtgc tcatg 45

<210> 393
<211> 471
<212> DNA
<213> Homo sapiens

<400> 393
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atccgacaac agctgtccca gctgacacgt atccagctac tggctctgct 150
gatgatgaag cccctgatgc tgaaaccact gctgctgcaa ccactgcgac 200
cactgctgct cctaccactg caaccaccgc tgttcttacc actgctcgta 250
aagacattcc agttttaccc aaatgggttg gggatctccc gaatggtaga 300
gtgtgtccct gagatggaat cagcttgagt cttctgcaat tggtcacaac 350
tattcatgct tctgtgatt tcatccaact acttaccttg cctacgatat 400
cccttttacc tctaatacgt ttattttctt tcaataaaaa aataactatg 450
agcaacataa aaaaaaaaaa a 471

<210> 394
<211> 90
<212> PRT
<213> Homo sapiens

<400> 394
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20 25 30
Tyr Pro Ala Thr Gly Pro Ala Asp Asp Glu Ala Pro Asp Ala Glu
35 40 45
Thr Thr Ala Ala Thr Thr Thr Thr Thr Ala Ala Pro Thr Thr
50 55 60
Ala Thr Thr Ala Ala Ser Thr Thr Ala Arg Lys Asp Ile Pro Val
65 70 75
Leu Pro Lys Trp Val Gly Asp Leu Pro Asn Gly Arg Val Cys Pro
80 85 90

<210> 395
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 395
gtccctgat cttcatgtca ccacc 25

<210> 396
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 396
cagggaacaca ctctaccatt cgaggag 26

<210> 397
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 397
ccatctttct ggtctctgcc cagaatccga caacagctgc tc 42

<210> 398
<211> 907
<212> DNA
<213> Homo sapiens

<400> 398
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gtgttcacgg tggcctggtc cctccttgcc gagagagtgt cctgggtcag 200
ggacgcagag gacgctcaca gactccagcc ctttgttacc gagaggacac 250
ttggcaaggt ccagcgatgg tccggagtcc acacacagac tggcggcagg 300
gcaggagggg gacagtcttg ttgtgcttgg ttggacagta agagggtctt 350
ggccagctcca ggggtggggg cggcaaacct cataaagaac cagagggtct 400
gggccccggc cacagagtca tctgccagc toctctgctg ctggccagtg 450
ggagtggcac gaggtggggc tttgtgccag taaaaccaca ggctggattt 500
gcctcggggc catggtcctt gtctagggca gcaattctca accttcttgc 550
tctcaggacc ccaaagagct ttcattgtat ctattgattt ttaccacatt 600
agcaattaaa actgagaaat gggccgggca cgggtggctca gcgctgtaat 650

cccagcactt tgggaggccg aggcgggtgg atcacctgag atcaggagtt 700
 caagaccagc ctggccaaca tggtagaacc ttgtctacta aaaatacaaa 750
 aaattagcca ggcacagtgg tgtgcactgg tagtcccgat tactcgggag 800
 gctgaggcag gaaaatcgct tgaaccacagg aggcggacgt tgcggtgagc 850
 cgagatcgcg ccgctgattc cagcctgggc gacaagagtg agactccatc 900
 tcacaca 907

<210> 399
 <211> 120
 <212> PRT
 <213> Homo sapiens

<400> 399
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 20 25 30
 Asp Ala His Arg Leu Gln Pro Phe Val Thr Glu Arg Thr Leu Gly
 35 40 45
 Lys Val Gln Arg Trp Ser Gly Val His Thr Gln Thr Gly Gly Arg
 50 55 60
 Ala Gly Gly Gly Gln Phe Cys Cys Ala Trp Leu Asp Ser Lys Arg
 65 70 75
 Val Leu Ala Ser Pro Gly Trp Gly Ala Ala Asn Ser Ile Lys Asn
 80 85 90
 Gln Arg Val Trp Ala Pro Ala Thr Glu Ser Ser Ala Gln Leu Leu
 95 100 105
 Cys Cys Trp Pro Val Gly Val Ala Arg Gly Gly Ala Leu Cys Gln
 110 115 120

<210> 400
 <211> 893
 <212> DNA
 <213> Homo sapiens

<400> 400
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 aggagctgac cctgctcttc catgggaccc tgcagctggg ccaggccctc 150
 aacggtgtgt acaggaccac ggagggacgg ctgacaaagg ccagggaacag 200
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 ggggccggga tgcagcccag gaacttcggg caagcctggt ggagactcag 300
 atggaggagg atattctgca gctgcaggca gaggccacag ctgaggtgct 350
 gggggagggtg gccaggcac agaaggtgct acgggacagc gtgcagcggc 400

tagaagtcca gctgaggagc gcctggctgg gccctgccta cggagaattt 450
 gaggtctttaa aggtctacgc tgacaagcag agccacatcc tatgggcct 500
 cacaggccac gtgcagcggc agaggcggga gatggtggca cagcagcatc 550
 ggctgcgaca gatccaggag agactccaca cagcggcgct ccagcctga 600
 atctgcctgg atggaactga ggaccaatca tgctgcaagg aacacttcca 650
 cgccccgtga ggccccgtg caggaggagg ctgcctgttc actgggatca 700
 gccagggcgc cgggccccac ttctgagcac agagcagaga cagacgcagg 750
 cggggacaaa ggcagaggat gtagcccat tggggagggg tggaggaagg 800
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 atttcaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaa 893

<210> 401
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 401
 Met Pro Val Pro Ala Leu Cys Leu Leu Trp Ala Leu Ala Met Val
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 Thr Arg Pro Ala Ser Ala Ala Pro Met Gly Gly Pro Glu Leu Ala
 20 25 30
 Gln His Glu Glu Leu Thr Leu Leu Phe His Gly Thr Leu Gln Leu
 35 40 45
 Gly Gln Ala Leu Asn Gly Val Tyr Arg Thr Thr Glu Gly Arg Leu
 50 55 60
 Thr Lys Ala Arg Asn Ser Leu Gly Leu Tyr Gly Arg Thr Ile Glu
 65 70 75
 Leu Leu Gly Gln Glu Val Ser Arg Gly Arg Asp Ala Ala Gln Glu
 80 85 90
 Leu Arg Ala Ser Leu Leu Glu Thr Gln Met Glu Glu Asp Ile Leu
 95 100 105
 Gln Leu Gln Ala Glu Ala Thr Ala Glu Val Leu Gly Glu Val Ala
 110 115 120
 Gln Ala Gln Lys Val Leu Arg Asp Ser Val Gln Arg Leu Glu Val
 125 130 135
 Gln Leu Arg Ser Ala Trp Leu Gly Pro Ala Tyr Arg Glu Phe Glu
 140 145 150
 Val Leu Lys Ala His Ala Asp Lys Gln Ser His Ile Leu Trp Ala
 155 160 165
 Leu Thr Gly His Val Gln Arg Gln Arg Arg Glu Met Val Ala Gln
 170 175 180
 Gln His Arg Leu Arg Gln Ile Gln Glu Arg Leu His Thr Ala Ala

Leu Pro Ala

<210> 402

<211> 1915

<212> DNA

<213> Homo sapiens

<400> 402

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 atatgcgagt tcaccatccc taaataggto tttctccaat gtgtcctcca 650
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 aatcataaatt ttacttatt aaaaaattgc aacacaagat caatgtccat 750
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 tgaagaggtt ctgatttgat tttttttttt tottcatgcc tacccttttt 1250
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atcaattttc attcccacca ttgcattaca acctctaact taaatgggta 1350
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 tttttttagc catcattata tgtttaagtc tattatgggc aaccaatcct 1550
 tgggaagctga aaactgaatt taaagaatgc tatottggaa aattgcatac 1600
 gtctgtgcaa ttttttattc tgcctagtgc tattctgctt gtttaactag 1650
 attgtacaaa ataacttcat tgcttaatat caaattacaa agtttagact 1700
 tggagggaaa tgggcttttt agaagcaaac aattttaaat atattttgtt 1750
 cttcaataaa atagtgttta aacattgaat gtgtttgtg aacaatatcc 1800
 cactttgcaa actttaacta cacatgcttg gaattaagtt ttagctgttt 1850
 tcattgtcca ataataaagc ctgaattctg atcaataaaa aaaaaaaaaa 1900
 aaaaaaaaaa aaaaa 1915

<210> 403
 <211> 206
 <212> PRT
 <213> Homo sapiens

<400> 403
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 20 25 30
 Ser His Thr Ser Arg Leu Lys Ala Arg Lys His Ser Lys Arg Arg
 35 40 45
 Val Arg Asp Lys Asp Gly Asp Leu Lys Thr Gln Ile Glu Lys Leu
 50 55 60
 Trp Thr Glu Val Asn Ala Leu Lys Glu Ile Gln Ala Leu Gln Thr
 65 70 75
 Val Cys Leu Arg Gly Thr Lys Val His Lys Lys Cys Tyr Leu Ala
 80 85 90
 Ser Glu Gly Leu Lys His Phe His Glu Ala Asn Glu Asp Cys Ile
 95 100 105
 Ser Lys Gly Gly Ile Leu Val Ile Pro Arg Asn Ser Asp Glu Ile
 110 115 120
 Asn Ala Leu Gln Asp Tyr Gly Lys Arg Ser Leu Pro Gly Val Asn
 125 130 135
 Asp Phe Trp Leu Gly Ile Asn Asp Met Val Thr Glu Gly Lys Phe
 140 145 150
 Val Asp Val Asn Gly Ile Ala Ile Ser Phe Leu Asn Trp Asp Arg

ggccctgaag gccctgctgg gggccctgac agtgtttggc tgagccgaga 400
ctggagcatc tacacctgag gacaagacgc tgcccacccg cgagggtgga 450
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aaaaaaaaaa aaaaaaaaaa 570

<210> 408
<211> 104
<212> PRT
<213> Homo sapiens

<400> 408
Met Lys Leu Ala Ala Leu Leu Gly Leu Cys Val Ala Leu Ser Cys
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Ser Ser Ala Ala Ala Phe Leu Val Gly Ser Ala Lys Pro Val Ala
20 25 30
Gln Pro Val Ala Ala Leu Glu Ser Ala Ala Glu Ala Gly Ala Gly
35 40 45
Thr Leu Ala Asn Pro Leu Gly Thr Leu Asn Pro Leu Lys Leu Leu
50 55 60
Leu Ser Ser Leu Gly Ile Pro Val Asn His Leu Ile Glu Gly Ser
65 70 75
Gln Lys Cys Val Ala Glu Leu Gly Pro Gln Ala Val Gly Ala Val
80 85 90
Lys Ala Leu Lys Ala Leu Leu Gly Ala Leu Thr Val Phe Gly
95 100

<210> 409
<211> 2089
<212> DNA
<213> Homo sapiens

<400> 409
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ggccccagct cctcagtcgc cagagacccc agcccctcag aaccagacca 200
gcagggtagt gcaggctccc agggaggaag aggaagatga gcaggaggcc 250
agcgaggaga aggccggtga ggaagagaaa gcctggctga tggccagcag 300
gcagcagctt gccaaaggaga cttcaaaactt cggattcagc ctgtgcgcaa 350
agatctccat gaggcacgat ggcaacatgg tcttctctcc atttggcatg 400
tccttggcca tgacaggctt gatgctgggg gccacagggc cgactgaaac 450
ccagatcaag agagggtccc acttgtaggc cctgaagccc accaagcccg 500

| | | | | | |
|-------------|-------------|-------------|-------------|-------------|------|
| ggctcctgcgc | ttccctcttt | aagggaactca | gagagaccct | ctcccgcaac | 550 |
| ctggaactggt | gcctctcaca | ggggagtttt | gccttcaccc | acaaggattt | 600 |
| tgatgtcaaa | gagactttct | tcaattttatc | caagagggtat | tttgatacac | 650 |
| agtgcgtgcc | tatgaatttt | cgcaatgcct | cacaggccaa | aaggctcatg | 700 |
| aatcattaca | ttacaaaga | gactcggggg | aaaattccca | aactgtttga | 750 |
| tgagattaat | cctgaacca | aattaattct | tgtggattac | atcttgttca | 800 |
| aagggaatg | gttgaccca | tttgacccgt | tcttcaccga | agtcgacact | 850 |
| ttccacctg | acaagtaca | gaaccattaag | gtgcccata | tgtaagggtgc | 900 |
| aggcaagtgt | gcctccacct | ttgacaaaga | ttttcgttgt | catgtcctca | 950 |
| aactgcctca | ccaaggaaat | gccaccatgc | tgggtggtcct | catggagaaa | 1000 |
| atgggtgacc | acctgcacct | tgaagactac | ctgaaccacg | acttggttga | 1050 |
| gacatggctc | agaaacatga | aaaccagaaa | catggaagtt | ttctttccga | 1100 |
| agttaacgt | agatcagaag | tatgagatgc | atgagctgct | taggcagatg | 1150 |
| ggaatcagaa | gaatctttct | acccctttgt | gaccttagtg | aactctcagc | 1200 |
| tactggaaga | aatctccaag | tatccagggt | tttacgaaga | acagtgattg | 1250 |
| agttgatga | aaggggcact | gaggcagtg | caggaatctt | gtcagaaaat | 1300 |
| actgcttatt | ccatgcctcc | tgtoatcaaa | gtggaccggc | catttcatct | 1350 |
| catgatctat | gaagaaacct | ctggaatgct | tctgtttctg | ggcagggttg | 1400 |
| tgaatccgac | tctcctataa | ttcaggacat | gcataagcac | ttcgtgtgtg | 1450 |
| agtagatgct | gaatctgagg | tatcaaacac | acacaggata | ccagcaatgg | 1500 |
| atggcagggg | agagtgttcc | ttttgttctt | aactagttta | gggtgtttct | 1550 |
| aaataaatac | agtagtcccc | acttatctga | gggggatata | ttcaaaagac | 1600 |
| cccagcagat | gcctgaaacg | gtggacagtg | ctgaacctta | tatatatttt | 1650 |
| ttcctacaca | tacataccta | tgataaaagt | taatttataa | attaggcaca | 1700 |
| gtaagagatt | aacaataata | acaacattaa | gtaaaatgag | ttacttgaac | 1750 |
| gcaagcactg | caatacatta | acagtcaaac | tgattataga | gaaggctact | 1800 |
| aagtgactca | tgggcgagga | gcatagacag | tgtggagaca | ttgggcaagg | 1850 |
| ggagaattca | catcctgggt | gggacagagc | aggacagatc | aagattccat | 1900 |
| cccactactc | agaatggcat | gctgcttaag | acttttagat | tgtttatttc | 1950 |
| tggaattttt | catttaattgt | ttttggacca | tggttgacca | tggttaactg | 2000 |
| agactgcaga | aagcaaaacc | atggataaag | gaggactact | acaaaagcat | 2050 |
| taaattgata | catatttttt | aaaaaaaaaa | aaaaaaaaaa | 2089 | |

<210> 410
 <211> 444
 <212> PRT
 <213> Homo sapiens

<400> 410

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Lys | Val | Val | Pro | Ser | Leu | Leu | Leu | Ser | Val | Leu | Leu | Ala | Gln |
| 1 | | | | 5 | | | | | 10 | | | | | 15 |
| Val | Trp | Leu | Val | Pro | Gly | Leu | Ala | Pro | Ser | Pro | Gln | Ser | Pro | Glu |
| | | | | 20 | | | | | 25 | | | | | 30 |
| Thr | Pro | Ala | Pro | Gln | Asn | Gln | Thr | Ser | Arg | Val | Val | Gln | Ala | Pro |
| | | | | 35 | | | | | 40 | | | | | 45 |
| Arg | Glu | Glu | Glu | Glu | Asp | Glu | Gln | Glu | Ala | Ser | Glu | Glu | Lys | Ala |
| | | | | 50 | | | | | 55 | | | | | 60 |
| Gly | Glu | Glu | Glu | Lys | Ala | Trp | Leu | Met | Ala | Ser | Arg | Gln | Gln | Leu |
| | | | | 65 | | | | | 70 | | | | | 75 |
| Ala | Lys | Glu | Thr | Ser | Asn | Phe | Gly | Phe | Ser | Leu | Leu | Arg | Lys | Ile |
| | | | | 80 | | | | | 85 | | | | | 90 |
| Ser | Met | Arg | His | Asp | Gly | Asn | Met | Val | Phe | Ser | Pro | Phe | Gly | Met |
| | | | | 95 | | | | | 100 | | | | | 105 |
| Ser | Leu | Ala | Met | Thr | Gly | Leu | Met | Leu | Gly | Ala | Thr | Gly | Pro | Thr |
| | | | | 110 | | | | | 115 | | | | | 120 |
| Glu | Thr | Gln | Ile | Lys | Arg | Gly | Leu | His | Leu | Gln | Ala | Leu | Lys | Pro |
| | | | | 125 | | | | | 130 | | | | | 135 |
| Thr | Lys | Pro | Gly | Leu | Leu | Pro | Ser | Leu | Phe | Lys | Gly | Leu | Arg | Glu |
| | | | | 140 | | | | | 145 | | | | | 150 |
| Thr | Leu | Ser | Arg | Asn | Leu | Glu | Leu | Gly | Leu | Ser | Gln | Gly | Ser | Phe |
| | | | | 155 | | | | | 160 | | | | | 165 |
| Ala | Phe | Ile | His | Lys | Asp | Phe | Asp | Val | Lys | Glu | Thr | Phe | Phe | Asn |
| | | | | 170 | | | | | 175 | | | | | 180 |
| Leu | Ser | Lys | Arg | Tyr | Phe | Asp | Thr | Glu | Cys | Val | Pro | Met | Asn | Phe |
| | | | | 185 | | | | | 190 | | | | | 195 |
| Arg | Asn | Ala | Ser | Gln | Ala | Lys | Arg | Leu | Met | Asn | His | Tyr | Ile | Asn |
| | | | | 200 | | | | | 205 | | | | | 210 |
| Lys | Glu | Thr | Arg | Gly | Lys | Ile | Pro | Lys | Leu | Phe | Asp | Glu | Ile | Asn |
| | | | | 215 | | | | | 220 | | | | | 225 |
| Pro | Glu | Thr | Lys | Leu | Ile | Leu | Val | Asp | Tyr | Ile | Leu | Phe | Lys | Gly |
| | | | | 230 | | | | | 235 | | | | | 240 |
| Lys | Trp | Leu | Thr | Pro | Phe | Asp | Pro | Val | Phe | Thr | Glu | Val | Asp | Thr |
| | | | | 245 | | | | | 250 | | | | | 255 |
| Phe | His | Leu | Asp | Lys | Tyr | Lys | Thr | Ile | Lys | Val | Pro | Met | Met | Tyr |
| | | | | 260 | | | | | 265 | | | | | 270 |
| Gly | Ala | Gly | Lys | Phe | Ala | Ser | Thr | Phe | Asp | Lys | Asn | Phe | Arg | Cys |
| | | | | 275 | | | | | 280 | | | | | 285 |

His Val Leu Lys Leu Pro Tyr Gln Gly Asn Ala Thr Met Leu Val
 290 295 300
 Val Leu Met Glu Lys Met Gly Asp His Leu Ala Leu Glu Asp Tyr
 305 310 315
 Leu Thr Thr Asp Leu Val Glu Thr Trp Leu Arg Asn Met Lys Thr
 320 325 330
 Arg Asn Met Glu Val Phe Phe Pro Lys Phe Lys Leu Asp Gln Lys
 335 340 345
 Tyr Glu Met His Glu Leu Leu Arg Gln Met Gly Ile Arg Arg Ile
 350 355 360
 Phe Ser Pro Phe Ala Asp Leu Ser Glu Leu Ser Ala Thr Gly Arg
 365 370 375
 Asn Leu Gln Val Ser Arg Val Leu Arg Arg Thr Val Ile Glu Val
 380 385 390
 Asp Glu Arg Gly Thr Glu Ala Val Ala Gly Ile Leu Ser Glu Ile
 395 400 405
 Thr Ala Tyr Ser Met Pro Pro Val Ile Lys Val Asp Arg Pro Phe
 410 415 420
 His Phe Met Ile Tyr Glu Glu Thr Ser Gly Met Leu Leu Phe Leu
 425 430 435
 Gly Arg Val Val Asn Pro Thr Leu Leu
 440

<210> 411
 <211> 636
 <212> DNA
 <213> Homo sapiens

<400> 411
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 ccagacatg aggaggtcc tcctggtcac cagcctggtg gttgtgctgc 100
 tgtggggaggc aggtgcagtc ccagcaccga aggtccctat caagatgcaa 150
 gtcaaacact ggccctcaga gcaggaccga gagaaggcct ggggcgcccgc 200
 tgtgtgtggag cctccggaga aggaacgacca gctggtggtg ctgtccctg 250
 tccagaagcc gaaactcttg accaccgagg agaagccacg aggtcagggc 300
 aggggccccga tccttcacag caccaaggcc tggatggaga ccgaggacac 350
 cctgggcccgt gtctcgagtc ccgagccoga ccatgacacg ctgtaccacc 400
 ctccgcctga ggaggaccag ggcgaggaga ggccccggtt gtgggtgatg 450
 ccaaatcacc aggtgctcct gggaccggag gaagaccaag accacatcta 500
 ccacccccag tagggctcca ggggccatca ctgccccgcg cctgtcccaa 550
 ggcccaggct gttgggactg ggaccctccc taccctgccc cagctagaca 600

aataaacccc agcaggcaaa aaaaaaaaaa aaaaaa 636

<210> 412

<211> 151

<212> PRT

<213> Homo sapiens

<400> 412

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Arg | Arg | Leu | Leu | Val | Thr | Ser | Leu | Val | Val | Val | Leu | Leu | |
| 1 | | | 5 | | | | | 10 | | | | | 15 | |
| Trp | Glu | Ala | Gly | Ala | Val | Pro | Ala | Pro | Lys | Val | Pro | Ile | Lys | Met |
| | | | 20 | | | | | 25 | | | | | 30 | |
| Gln | Val | Lys | His | Trp | Pro | Ser | Glu | Gln | Asp | Pro | Glu | Lys | Ala | Trp |
| | | | 35 | | | | | 40 | | | | | 45 | |
| Gly | Ala | Arg | Val | Val | Glu | Pro | Pro | Glu | Lys | Asp | Asp | Gln | Leu | Val |
| | | | 50 | | | | | 55 | | | | | 60 | |
| Val | Leu | Phe | Pro | Val | Gln | Lys | Pro | Lys | Leu | Leu | Thr | Thr | Glu | Glu |
| | | | 65 | | | | | 70 | | | | | 75 | |
| Lys | Pro | Arg | Gly | Gln | Gly | Arg | Gly | Pro | Ile | Leu | Pro | Gly | Thr | Lys |
| | | | 80 | | | | | 85 | | | | | 90 | |
| Ala | Trp | Met | Glu | Thr | Glu | Asp | Thr | Leu | Gly | Arg | Val | Leu | Ser | Pro |
| | | | 95 | | | | | 100 | | | | | 105 | |
| Glu | Pro | Asp | His | Asp | Ser | Leu | Tyr | His | Pro | Pro | Pro | Glu | Glu | Asp |
| | | | 110 | | | | | 115 | | | | | 120 | |
| Gln | Gly | Glu | Glu | Arg | Pro | Arg | Leu | Trp | Val | Met | Pro | Asn | His | Gln |
| | | | 125 | | | | | 130 | | | | | 135 | |
| Val | Leu | Leu | Gly | Pro | Glu | Glu | Asp | Gln | Asp | His | Ile | Tyr | His | Pro |
| | | | 140 | | | | | 145 | | | | | 150 | |

Gln

<210> 413

<211> 1176

<212> DNA

<213> Homo sapiens

<400> 413

agaaagctgc actctgttga gctccagggc gcagtgaggagg gagggagtga 50

aggagctctc tgtaccaag gaaagtgcag ctgagactca gacaagatta 100

caatgaacca actcagcttc ctgctgtttc tcatagogac caccagagga 150

tggagtacag atgaggctaa tacttacttc aaggaaatgga cctgttcttc 200

gtctccatct ctgccagaa gctgcaagga aatcaaagac gaatgtccta 250

gtgcatttga tggcctgtat ttctccgca ctgagaatgg tggtatctac 300

cagaccttct gtgacatgac ctctgggggt ggcggctgga ccctggtggc 350

cagcgtgcat gagaatgaca tgcgtgggaa gtgcacgggt ggcgatcgct 400

ggtccagtcg gcagggcagc aaagcagact acccagaggg ggacggcaac 450
 tgggccaaact acaacacactt tggatctgca gaggcgcca cgagcgatga 500
 ctacaagaac cctggctact acgacatcca ggccaaggac ctgggcatct 550
 ggcacgtgcc caataagtcc cccatgcagc actggagaaa cagctccctg 600
 ctgagggtacc gcacggacac tggcttctc cagacactgg gacataatct 650
 gtttggcatc taccagaaat atccagtga atatggagaa gaaagtgtt 700
 ggactgacaa cggtccggtg atccctgtg tctatgatt tggcgagcc 750
 cagaaaacag catcttatta ctcaccctat ggccagcggg aattcactgc 800
 gggatttgtt cagttcaggg tatttaataa cgagagagca gccaacgcct 850
 tgtgtgctgg aatgagggtc accggatgta aactgagca tcaactgcatt 900
 ggtggaggag gatactttcc agaggccagt cccagcagt gtggagattt 950
 ttctggtttt gattggagt gatatggaac tcatgttgt tacagagca 1000
 gccgtgagat aactgaggca gctgtgcttc tattctatcg ttgagagttt 1050
 tgtggaggag aaccagacc tctctccca accatgagat cccaaggatg 1100
 gagaacaact taccagtag ctagaatgtt aatggcagaa gagaaaaaca 1150
 taaatcatat tgactcaaga aaaaaa 1176

<210> 414
 <211> 313
 <212> PRT
 <213> Homo sapiens

<400> 414
 Met Asn Gln Leu Ser Phe Leu Leu Phe Leu Ile Ala Thr Thr Arg
 1 5 10 15
 Gly Trp Ser Thr Asp Glu Ala Asn Thr Tyr Phe Lys Glu Trp Thr
 20 25 30
 Cys Ser Ser Ser Pro Ser Leu Pro Arg Ser Cys Lys Glu Ile Lys
 35 40 45
 Asp Glu Cys Pro Ser Ala Phe Asp Gly Leu Tyr Phe Leu Arg Thr
 50 55 60
 Glu Asn Gly Val Ile Tyr Gln Thr Phe Cys Asp Met Thr Ser Gly
 65 70 75
 Gly Gly Gly Trp Thr Leu Val Ala Ser Val His Glu Asn Asp Met
 80 85 90
 Arg Gly Lys Cys Thr Val Gly Asp Arg Trp Ser Ser Gln Gln Gly
 95 100 105
 Ser Lys Ala Asp Tyr Pro Glu Gly Asp Gly Asn Trp Ala Asn Tyr
 110 115 120
 Asn Thr Phe Gly Ser Ala Glu Ala Ala Thr Ser Asp Asp Tyr Lys

| | | |
|---|-----|-----|
| 125 | 130 | 135 |
| Asn Pro Gly Tyr Tyr Asp Ile Gln Ala Lys Asp Leu Gly Ile Trp | | |
| 140 | 145 | 150 |
| His Val Pro Asn Lys Ser Pro Met Gln His Trp Arg Asn Ser Ser | | |
| 155 | 160 | 165 |
| Leu Leu Arg Tyr Arg Thr Asp Thr Gly Phe Leu Gln Thr Leu Gly | | |
| 170 | 175 | 180 |
| His Asn Leu Phe Gly Ile Tyr Gln Lys Tyr Pro Val Lys Tyr Gly | | |
| 185 | 190 | 195 |
| Glu Gly Lys Cys Trp Thr Asp Asn Gly Pro Val Ile Pro Val Val | | |
| 200 | 205 | 210 |
| Tyr Asp Phe Gly Asp Ala Gln Lys Thr Ala Ser Tyr Tyr Ser Pro | | |
| 215 | 220 | 225 |
| Tyr Gly Gln Arg Glu Phe Thr Ala Gly Phe Val Gln Phe Arg Val | | |
| 230 | 235 | 240 |
| Phe Asn Asn Glu Arg Ala Ala Asn Ala Leu Cys Ala Gly Met Arg | | |
| 245 | 250 | 255 |
| Val Thr Gly Cys Asn Thr Glu His His Cys Ile Gly Gly Gly Gly | | |
| 260 | 265 | 270 |
| Tyr Phe Pro Glu Ala Ser Pro Gln Gln Cys Gly Asp Phe Ser Gly | | |
| 275 | 280 | 285 |
| Phe Asp Trp Ser Gly Tyr Gly Thr His Val Gly Tyr Ser Ser Ser | | |
| 290 | 295 | 300 |
| Arg Glu Ile Thr Glu Ala Ala Val Leu Leu Phe Tyr Arg | | |
| 305 | 310 | |

<210> 415
 <211> 1281
 <212> DNA
 <213> Homo sapiens

<400> 415
 gcggagccgg cgccggctgc gcagaggagc cgctctcgcc gccgccacct 50
 cggtcgggag cccacgaggc tgccgcatcc tgccctcgga acaatgggac 100
 tcggcgcgcg aggtgcttgg gccgcgctgc tctcggggac gctgcagggtg 150
 cttagcgctgc tgggggcccgc ccatgaaagc gcagccatgg cggcacatgc 200
 aaacatagag aattctgggc ttccacacaa ctccagtgct aactcaacag 250
 agactctcca acatgtgcct tctgaccata caaatgaaac ttccaacagt 300
 actgtgaaac caccaacttc agttgcctca gactccagta atacaacggt 350
 caccaccatg aaacctacag cggcacataa tacaacaaca ccagggatgg 400
 tctcaacaaa tatgacttct accaccttaa agtctacacc caaacaaca 450
 agtgtttacc agaacacatc tcagatatca acatccacaa tgaccgtaac 500

ccacaatagt tcagtgacat ctgctgcttc atcagtaaca atcacaacaa 550
 ctatgcattc tgaagcaaag aaaggatcaa aatttgatgc tgggagcttt 600
 gttggtggta ttgtattaac gctgggagtt ttatctattc ttacattgg 650
 atgcaaatg tattactcaa gaagaggcat tcggtatcga accatagatg 700
 aacatgatgc catcatttaa ggaatccat ggaccaagga tggaatacag 750
 attgatgctg cccatcaat taattttggt ttattaatag tttaaaacaa 800
 tattctcttt ttgaaatag tataaacagg ccatgcatat aatgtacagt 850
 gtattacgta aatatgtaaa gattcttcaa ggtaacaagg gtttgggttt 900
 tgaaataaac atctggatct tatagaccgt tcatacaatg gttttagcaa 950
 gttcatagta agacaaacaa gtccatcttt ttttttttgg ctgggggtggg 1000
 ggcattggtc acatatgacc agtaattgaa agacgtcatc actgaaagac 1050
 agaatgccat ctgggcatac aaataagaag tttgtcacag cactcaggat 1100
 tttgggtatc tttttagct cacataaaga acttcagtgc ttttcagagc 1150
 tggatatatc ttaattacta atgccacaca gaaattatac aatcaaaacta 1200
 gatctgaagc ataatttaag aaaaacatca acattttttg tgctttaaac 1250
 tgtagtagtt ggtctagaaa caaaatactc c 1281

<210> 416
 <211> 208
 <212> PRT
 <213> Homo sapiens

<400> 416
 Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly
 1 5 10 15
 Thr Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala
 20 25 30
 Ala Met Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His
 35 40 45
 Asn Ser Ser Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser
 50 55 60
 Asp His Thr Asn Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr
 65 70 75
 Ser Val Ala Ser Asp Ser Ser Asn Thr Thr Val Thr Thr Met Lys
 80 85 90
 Pro Thr Ala Ala Ser Asn Thr Thr Thr Pro Gly Met Val Ser Thr
 95 100 105
 Asn Met Thr Ser Thr Thr Leu Lys Ser Thr Pro Lys Thr Thr Ser
 110 115 120
 Val Ser Gln Asn Thr Ser Gln Ile Ser Thr Ser Thr Met Thr Val

| | | | | | |
|---|-----|--|-----|--|-----|
| | 125 | | 130 | | 135 |
| Thr His Asn Ser Ser Val Thr Ser Ala Ala Ser Ser Val Thr Ile | 140 | | 145 | | 150 |
| Thr Thr Thr Met His Ser Glu Ala Lys Lys Gly Ser Lys Phe Asp | 155 | | 160 | | 165 |
| Thr Gly Ser Phe Val Gly Gly Ile Val Leu Thr Leu Gly Val Leu | 170 | | 175 | | 180 |
| Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser Arg Arg Gly | 185 | | 190 | | 195 |
| Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile | 200 | | 205 | | |

<210> 417
 <211> 1728
 <212> DNA
 <213> Homo sapiens

<400> 417
 cagccggggtc ccaagcctgt gcctgagcct gagcctgagc ctgagcccgga 50
 gccgggagacc ggtcgcgggg gctccgggct gtgggaccgc tgggccccca 100
 gcgatggcga cctgtgggg aggccttctt cggcttggtc ccttgctcag 150
 cctgtcgtgc ctggcgcttt ccgtgctgct gctggcgagc ctgtcagacg 200
 ccgccaagaa ttctgaggat gtcagatgta aatgtatctc ccctccctat 250
 aaagaaaatt ctgggcatac ttataataag aacatatctc agaaagattg 300
 tgattgcctt catgttgttg agcccatgcc tgtgcggggg cctgatgtag 350
 aagcatactg tctacgctgt gaatgcaaat atgaagaaag aagctctgtc 400
 acaatcaagg ttaccattat aatttatctc tccattttgg gccttctact 450
 tctgtacatg gtatatctta ctctggttga gcccatactg aagaggcgcc 500
 tctttggaca tgcacagttg atacagagtg atgatgatat tggggatcac 550
 cagccttttg caaatgcaca cgatgtgcta gcccgctccc gcagtcgagc 600
 caacgtgctg aacaaggtag aatatgcaca gcagcgctgg aagcttcaag 650
 tccaagagca gcgaaagtct gtctttgacc ggcatgtgtt cctcagctaa 700
 ttgggaattg aattcaaggt gactagaaag aaacaggcag acaactggaa 750
 agaactgact gggttttgct gggtttcatt ttaataacct gttgatttca 800
 ccaactgttg ctggaagatt caaaactgga agcaaaaaat tgcttgattt 850
 ttttttcttg ttaacgtaat aatagagaca tttttaaaaa cacacagctc 900
 aaagtcagcc aataagtcct ttccatattg tgacttttcc taataaaaaa 950
 aaatctgcct gtaaattatc ttgaagtcct ttacctggaa caagcactct 1000

ctttttcacc acatagtttt aacttgactt tcaagataat tttcagggtt 1050
 tttgtgttg ttgtttttt ttgtttgtt ttgtgggag aggggaggga 1100
 tgcctgggaa gtggttaaca acttttttca agtcacttta ctaaacaaac 1150
 tttgtataat agaccttacc ttctattttc gagtttcatt tataattttgc 1200
 agtgtagcca gcctcatcaa agagctgact tactcatttg acttttgca 1250
 tgactgtatt atctgggtat ctgctgtgtc tgcacttcat ggtaaacggg 1300
 atctaaaatg cctgggtgct tttcacaaaa agcagatttt cttcatgtac 1350
 tgtgatgtct gatgcaatgc atcctagaac aaactggcca ttgctagtt 1400
 tactctaaag actaaacata gtcttggtgt gtgtggtctt actcatcttc 1450
 tagtaccttt aagacaaaat cctaaggact tggacacttg caataaagaa 1500
 attttatttt aaaccaagc ctccctggat tgataatata tacacatttg 1550
 tcagcatttc cggctgtgtt gagaggcagc tgtttgagct ccaatatgtg 1600
 cagctttgaa ctagggtctg ggttggtggt gcctcttctg aaaggtctaa 1650
 ccattatttg ataactggtt tttttcttcc tatgtctctt ttggaatgta 1700
 acaataaaaa taatttttga aacatcaa 1728

<210> 418
 <211> 198
 <212> PRT
 <213> Homo sapiens

<400> 418
 Met Ala Thr Leu Trp Gly Gly Leu Leu Arg Leu Gly Ser Leu Leu
 1 5 10 15
 Ser Leu Ser Cys Leu Ala Leu Ser Val Leu Leu Leu Ala Gln Leu
 20 25 30
 Ser Asp Ala Ala Lys Asn Phe Glu Asp Val Arg Cys Lys Cys Ile
 35 40 45
 Cys Pro Pro Tyr Lys Glu Asn Ser Gly His Ile Tyr Asn Lys Asn
 50 55 60
 Ile Ser Gln Lys Asp Cys Asp Cys Leu His Val Val Glu Pro Met
 65 70 75
 Pro Val Arg Gly Pro Asp Val Glu Ala Tyr Cys Leu Arg Cys Glu
 80 85 90
 Cys Lys Tyr Glu Glu Arg Ser Ser Val Thr Ile Lys Val Thr Ile
 95 100 105
 Ile Ile Tyr Leu Ser Ile Leu Gly Leu Leu Leu Tyr Met Val
 110 115 120
 Tyr Leu Thr Leu Val Glu Pro Ile Leu Lys Arg Arg Leu Phe Gly
 125 130 135

His Ala Gln Leu Ile Gln Ser Asp Asp Asp Ile Gly Asp His Gln
 140 145 150
 Pro Phe Ala Asn Ala His Asp Val Leu Ala Arg Ser Arg Ser Arg
 155 160 165
 Ala Asn Val Leu Asn Lys Val Glu Tyr Ala Gln Gln Arg Trp Lys
 170 175 180
 Leu Gln Val Gln Glu Gln Arg Lys Ser Val Phe Asp Arg His Val
 185 190 195
 Val Leu Ser

<210> 419
 <211> 681
 <212> DNA
 <213> Homo sapiens

<400> 419
 gcacctgcga ccaccgtgag cagtcatggc gtactccaca gtgcagagag 50
 tcgctctggc ttctgggctt gtctcggctc tgcctgctgt gctgcccaag 100
 gccttctcgt ccgcggggaa gcgcgaggag ccgccccga cacctgaagg 150
 aaaattgggc cgatttcac ctatgatgca tcatcaccag gcacctcag 200
 atggccagac tctcggggct cgtttcacga ggtctcacct tgccgaggca 250
 ttgcaaagg ccaaaggatc aggtggaggt gctggaggag gaggtagtgg 300
 aagaggtctg atggggcaga ttattccaat ctacggtttt gggatttttt 350
 tatatatact gtacattcta ttaaggtaa gtagaatcat ctaaatcata 400
 ttacatcaat gaaaatctaa tatggcgata aaaatcattg tctacattaa 450
 aactctttat agttcataaa attatttcaa atccatcatc tctttaaatc 500
 ctgcctcttc ttcgatgagg acttaggata gccattattt cagtttcaca 550
 taagaatgtt tactcaatgt ttaagtgttt tgcccaaaa ttcacaacta 600
 acaaggcaga actaggactt gaacatggat cttttggttc ttaatccagt 650
 gagtataca attcaatgca ctcccctgcc a 681

<210> 420
 <211> 128
 <212> PRT
 <213> Homo sapiens

<400> 420
 Met Ala Tyr Ser Thr Val Gln Arg Val Ala Leu Ala Ser Gly Leu
 1 5 10 15
 Val Leu Ala Leu Ser Leu Leu Leu Pro Lys Ala Phe Leu Ser Arg
 20 25 30
 Gly Lys Arg Gln Glu Pro Pro Pro Thr Pro Glu Gly Lys Leu Gly
 35 40 45

Arg Phe Pro Pro Met Met His His His Gln Ala Pro Ser Asp Gly
50 55 60

Gln Thr Pro Gly Ala Arg Phe Gln Arg Ser His Leu Ala Glu Ala
65 70 75

Phe Ala Lys Ala Lys Gly Ser Gly Gly Gly Ala Gly Gly Gly Gly
80 85 90

Ser Gly Arg Gly Leu Met Gly Gln Ile Ile Pro Ile Tyr Gly Phe
95 100 105

Gly Ile Phe Leu Tyr Ile Leu Tyr Ile Leu Phe Lys Val Ser Arg
110 115 120

Ile Ile Leu Ile Ile Leu His Gln
125

<210> 421
<211> 1630
<212> DNA
<213> Homo sapiens

<400> 421
cggtctgagtg gcagctgtgg ggagatttca gtgcattgcc tccccgggt 50
gctcttcatc ttggatttga aagttgagag cagcatgttt tgccactga 100
aactcatcct gctgccagtg ttactggatt attccttggg cctgaatgac 150
ttgaatgttt ccccgctga gctaacagtc catgtgggtg attcagctct 200
gatgggatgt gttttccaga gcacagaaga caaatgtata ttcaagatag 250
actggactct gtcaccagga gagcacgcca aggaogaata tgtgctatac 300
tattactcca atctcagtg gctatttggg cgttccaga accgcgtaca 350
cttgatgggg gacatcttat gcaatgatgg ctctctcctg ctccaagatg 400
tgcaagaggg tgaccaggga acctatatct gtgaaatccg cctcaaaggg 450
gagagccagg tgttcaagaa ggcggtggta ctgcatgtgc ttccagagga 500
gccaaaagag ctcatgttcc atgtgggtgg attgattcag atgggatgtg 550
ttttccagag cacagaagtg aaacacgtga ccaaggtaga atggatat 600
tcaggacggc gcgcaaagga ggagattgta ttctgttact accacaaact 650
caggatgtct gtggagtact ccagagctg gggccacttc cagaatcgtg 700
tgaacctggt gggggacatt ttccgcaatg acggttccat catgcttcaa 750
ggagtgaagg agtcagatgg aggaaactac acctgcagta tccacctagg 800
gaacctgggt ttcaagaaaa ccattgtgct gcatgtcagc ccggaagagc 850
ctcgaacact ggtgaccccg gcagccctga ggctctgtgt cttgggtggt 900
aatcagttgg tgatcattgt ggaattgtc tgtgccacaa tctgtgtgct 950
ccctgttctg atattgatcg tgaagaagac ctgtggaaat aagagttcag 1000

| | | |
|-------------------------|-----------------------------|-------------------------|
| 155 | 160 | 165 |
| Thr Lys Val Glu Trp 170 | Ile Phe Ser Gly Arg 175 | Arg Ala Lys Glu Glu 180 |
| Ile Val Phe Arg Tyr 185 | Tyr His Lys Leu Arg 190 | Met Ser Val Glu Tyr 195 |
| Ser Gln Ser Trp Gly 200 | His Phe Gln Asn Arg 205 | Val Asn Leu Val Gly 210 |
| Asp Ile Phe Arg Asn 215 | Asp Gly Ser Ile Met 220 | Leu Gln Gly Val Arg 225 |
| Glu Ser Asp Gly Gly 230 | Asn Tyr Thr Cys Ser 235 | Ile His Leu Gly Asn 240 |
| Leu Val Phe Lys Lys 245 | Thr Thr Ile Val Leu His 250 | Val Ser Pro Glu Glu 255 |
| Pro Arg Thr Leu Val 260 | Thr Pro Ala Ala Leu 265 | Arg Pro Leu Val Leu 270 |
| Gly Gly Asn Gln Leu 275 | Val Ile Ile Val Gly 280 | Ile Val Cys Ala Thr 285 |
| Ile Leu Leu Leu Pro 290 | Val Leu Ile Leu Ile 295 | Val Lys Lys Thr Cys 300 |
| Gly Asn Lys Ser Ser 305 | Val Asn Ser Thr Val 310 | Leu Val Lys Asn Thr 315 |
| Lys Lys Thr Asn Pro 320 | Glu Ile Lys Glu Lys 325 | Pro Cys His Phe Glu 330 |
| Arg Cys Glu Gly Glu 335 | Lys His Ile Tyr Ser 340 | Pro Ile Ile Val Arg 345 |
| Glu Val Ile Glu Glu 350 | Glu Glu Pro Ser Glu 355 | Lys Ser Glu Ala Thr 360 |
| Tyr Met Thr Met His 365 | Pro Val Trp Pro Ser 370 | Leu Arg Ser Asp Arg 375 |
| Asn Asn Ser Leu Glu 380 | Lys Lys Ser Gly Gly 385 | Gly Met Pro Lys Thr 390 |
| Gln Gln Ala Phe | | |

<210> 423

<211> 963

<212> DNA

<213> Homo sapiens

<400> 423

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agatactgaa attgtaagag ttggaacta cattttgcaa agtcattgaa 150

ctctgagctc attgacagta ctcggaagc catgcaggat gaagatggat 200

| | | |
|-----------------|---------------------|-------------------------|
| 125 | 130 | 135 |
| Thr Leu Leu Lys | Ile Asp Asn Arg Asn | Ile Val Glu Tyr Ile Lys |
| 140 | 145 | 150 |
| Ala Arg Thr His | Leu Ile Arg Trp Val | Gly Leu Ser Arg Gln Lys |
| 155 | 160 | 165 |
| Ser Asn Glu Val | Trp Lys Trp Glu Asp | Gly Ser Val Ile Ser Glu |
| 170 | 175 | 180 |
| Asn Met Phe Glu | Phe Leu Glu Asp Gly | Lys Gly Asn Met Asn Cys |
| 185 | 190 | 195 |
| Ala Tyr Phe His | Asn Gly Lys Met His | Pro Thr Phe Cys Glu Asn |
| 200 | 205 | 210 |
| Lys His Tyr Leu | Met Cys Glu Arg Lys | Ala Gly Met Thr Lys Val |
| 215 | 220 | 225 |
| Asp Gln Leu Pro | | |

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 <213> Artificial Sequence

<220>
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<400> 425
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<210> 426
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

<400> 426
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<210> 427
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 <212> DNA
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<220>
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<210> 428
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 <210> 429
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 <210> 431
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 cctttctgta taggtgatac ccaatga 27

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 tggccatccc taccagaggc aaaa 24

 <210> 437
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 <400> 437
 ctgaagacga cgcgattac ta 22

 <210> 438
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 ggcagaaatg ggaggcaga 19

 <210> 439
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 <400> 440
 agcagcagcc atgtagaatg aa 22

 <210> 441
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 aatacgaaca gtgcacgctg at 22

 <210> 442
 <211> 23
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <210> 443
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 <400> 443
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 <210> 444
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 <220>
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 <400> 444
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 <210> 445
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 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 445
 tcagtggccc taaggagatg ggcct 25

<210> 446
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 446
 caggatacacg tgggaatctt gaga 24

 <210> 447
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 cctgaagggc ttggagctta gt 22

 <210> 448
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 <220>
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 <400> 448
 tctttggcca tttcccatgg ctca 24

 <210> 449
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 <220>
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 <400> 449
 cccatggcga ggaggaat 18

 <210> 450
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 <220>
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 <400> 450
 tgcgtacgtg tgccttcag 19

 <210> 451
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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<400> 451
 cagcacccca ggcagtctgt gtgt 24

 <210> 452
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 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 452
 aacgtgctac acgaccagtg tact 24

 <210> 453
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 <212> DNA
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 <220>
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 <400> 453
 cacagcatat tcagatgact aaatcca 27

 <210> 454
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 <212> DNA
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 <220>
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 <400> 454
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 <213> Artificial Sequence

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 <400> 455
 tgtcagaatg caacctggct t 21

 <210> 456
 <211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 456
 tgatgtgcct ggctcagaac 20

 <210> 457
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 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Synthetic oligonucleotide probe

 <400> 457
 tgcacctaga tgtccccagc accc 24

 <210> 458
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 <400> 458
 aagatgcgcc aggctttctta 20

 <210> 459
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 <212> DNA
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 <400> 459
 ctctgtacg gtctgtcac ttat 24

 <210> 460
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
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 <400> 460
 tggctgtcag tccagtgtgc atgg 24

 <210> 461
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 <212> DNA
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 <400> 461
 gcatagggat agataagatc ctgctttat 29

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 <400> 462
 caaatataag tacccatcag gagagaa 27

 <210> 463
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<212> DNA
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 <400> 463
 aagttgctaa atatatacat tatctgcgcc aagtcca 37

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 <220>
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 <400> 464
 gtgctgcccc caattcatga 20

 <210> 465
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 <220>
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 <400> 465
 gtccttggtga tgggtctgaa ttatat 26

 <210> 466
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 <400> 466
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 <210> 467
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 <400> 467
 ctgaggaacc agccatgtct ct 22

 <210> 468
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 <400> 468
 gaccagatgc aggtacagga tga 23

<210> 469
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 <212> DNA
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 <220>
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 <400> 469
 ctgcccccttc agtgatgccac cctt 25

 <210> 470
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 <400> 470
 gggtggaggc tcaactgagta ga 22

 <210> 471
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 <400> 471
 caatacaggt aatgaaactc tgcttctt 28

 <210> 472
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 <212> DNA
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 <220>
 <223> Synthetic oligonucleotide probe

 <400> 472
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 <210> 473
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 <400> 473
 ggtggtcttg cttggtctca c 21

 <210> 474
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 <223> Synthetic oligonucleotide probe

<400> 474
ccgtcgttca gcaacatgac 20

<210> 475
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 475
accgcctacc gctgtgccca 20

<210> 476
<211> 23
<212> DNA
<213> Artificial Sequence

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<400> 476
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<213> Artificial Sequence

<220>
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<400> 477
cctgagagca agaaggttga gaat 24

<210> 478
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<212> DNA
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<223> Synthetic oligonucleotide probe

<400> 478
tagacaggga ccatggcccg ca 22

<210> 479
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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 479
tgggctgtag aagagttgtt g 21

<210> 480
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
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 <400> 480
 tccacacttg gccagtttat 20

 <210> 481
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 481
 cccaacttct cccttttgga ccct 24

 <210> 482
 <211> 24
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 482
 gtcccttcac tggttagagc atga 24

 <210> 483
 <211> 26
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> Synthetic oligonucleotide probe

 <400> 483
 actctccccc tcaacagcct cctgag 26

 <210> 484
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 <400> 484
 gtggtcaggg cagatccttt 20

 <210> 485
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 <400> 485
 acagatccag gagagactcc aca 23

 <210> 486
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<212> DNA
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<220>
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<400> 486
agcggcgctc ccagcctgaa t 21

<210> 487
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<400> 487
catgattgggt cctcagttcc atc 23

<210> 488
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<220>
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<400> 488
atagagggtg ccacagaagtg 20

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<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 489
cagggccttc agggccttca c 21

<210> 490
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 490
gtcagccaa acactgtca 19

<210> 491
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
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<400> 491
qqggccctga cagtgtt 17

<210> 492
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 492
ctgagccgag actggagcat ctacac 26

<210> 493
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide probe

<400> 493
gtgggcagcg tcttgto 17

<210> 494
<211> 1231
<212> DNA
<213> Homo Sapien

<400> 494
cccacggtc cgcgcagtcg cgcagttctg cctccgctg ccagtctcgc 50
ccgcgatccc ggcccggggc tgtggcgtcg actccgaccc aggcagccag 100
cagcccgccg gggagccgga ccgccgccgg aggagctcgg acggcatgct 150
gagcccccct ctttgctgaa gcccgagtgc ggagaagccc gggcaaacgc 200
aggctaagga gaccaaaagcg gcgaagtcgc gagacagcgg acaagcagcg 250
gaggagaagg aggaggagcg gaaccagag aggggcagca aaagaagcgg 300
tggtggtggg cgtcgtggcc atggcgccgg ctatcgccag ctgcctcctc 350
cgtcagaaga ggcaagcccg cgagcgccag aaatccaacg cctgcaagtg 400
tgtcagcagc ccagcaaaag gcaagaccag ctgcgacaaa aacaagttaa 450
atgtcttttc ccgggtcaaa ctcttcgggt ccaagaagag gcgcagaaga 500
agaccagagc ctcagcttaa gggatatgtt accaagctat acagccgaca 550
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atgaggacag cacttacact ctgtttaacc tcattccctgt gggctcgcga 650
gtggtggcta tccaaggagt tcaaaccaag ctgtacttgg caatgaacag 700
tgaggggatac ttgtacacct cggaactttt cacacctgag tgcaaatcca 750
aagaatcagt gtttgaatat tattatgtga catattcctc aatgatatac 800
cgtcagcagc agtcaggccg aggggtgtat ctgggtctga acaagaaggg 850
agagatcatg aaaggcaacc atgtgaagaa gaacaagcct gcagctcatt 900

ttctgcctaa accactgaaa gtggccatgt acaaggagcc atcactgcac 950
gatctcaccg agttctcccg atctggaagc gggaccccaa ccaagagcag 1000
aagtgtctct ggcgtgctga acggaggcaa atccatgagc cacaatgaat 1050
caacgtagcc agtgagggca aaagaagggc tctgtaacag aacottacot 1100
ccaggtgctg ttgaattctt ctacgagtc ttaccacaaa agttcaaatt 1150
tgtcagtgac atttaccaaa caaacaggca gagttcacta ttctatctgc 1200
cattagacct tcttatcatc catactaaag c 1231

<210> 495
<211> 245
<212> PRT
<213> Homo Sapien

<400> 495
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1 5 10 15
Ala Arg Glu Arg Glu Lys Ser Asn Ala Cys Lys Cys Val Ser Ser
20 25 30
Pro Ser Lys Gly Lys Thr Ser Cys Asp Lys Asn Lys Leu Asn Val
35 40 45
Phe Ser Arg Val Lys Leu Phe Gly Ser Lys Lys Arg Arg Arg Arg
50 55 60
Arg Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu Tyr Ser
65 70 75
Arg Gln Gly Tyr His Leu Gln Leu Gln Ala Asp Gly Thr Ile Asp
80 85 90
Gly Thr Lys Asp Glu Asp Ser Thr Tyr Thr Leu Phe Asn Leu Ile
95 100 105
Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Gln Thr Lys
110 115 120
Leu Tyr Leu Ala Met Asn Ser Glu Gly Tyr Leu Tyr Thr Ser Glu
125 130 135
Leu Phe Thr Pro Glu Cys Lys Phe Lys Glu Ser Val Phe Glu Asn
140 145 150
Tyr Tyr Val Thr Tyr Ser Ser Met Ile Tyr Arg Gln Gln Gln Ser
155 160 165
Gly Arg Gly Trp Tyr Leu Gly Leu Asn Lys Glu Gly Glu Ile Met
170 175 180
Lys Gly Asn His Val Lys Lys Asn Lys Pro Ala Ala His Phe Leu
185 190 195
Pro Lys Pro Leu Lys Val Ala Met Tyr Lys Glu Pro Ser Leu His
200 205 210
Asp Leu Thr Glu Phe Ser Arg Ser Gly Ser Gly Thr Pro Thr Lys

gcctggacaa ggagggccag gtcatgaagg gaaaccgagt taagaagacc 1300
 aaggcagctg cccactttct gcccaagctc ctggagggtg ccatgtacca 1350
 ggagccttct ctccacagtg tccccgaggc ctccccctcc agtccccctg 1400
 ccccttgaaa tgtagtccct ggactggagg ttcctgcac tcccagttag 1450
 ccagccacca ccacaacctg t 1471

<210> 497
 <211> 225
 <212> PRT
 <213> Homo Sapien

<400> 497
 Met Ala Ala Leu Ala Ser Ser Leu Ile Arg Gln Lys Arg Glu Val
 1 5 10 15
 Arg Glu Pro Gly Gly Ser Arg Pro Val Ser Ala Gln Arg Arg Val
 20 25 30
 Cys Pro Arg Gly Thr Lys Ser Leu Cys Gln Lys Gln Leu Leu Ile
 35 40 45
 Leu Leu Ser Lys Val Arg Leu Cys Gly Gly Arg Pro Ala Arg Pro
 50 55 60
 Asp Arg Gly Pro Glu Pro Gln Leu Lys Gly Ile Val Thr Lys Leu
 65 70 75
 Phe Cys Arg Gln Gly Phe Tyr Leu Gln Ala Asn Pro Asp Gly Ser
 80 85 90
 Ile Gln Gly Thr Pro Glu Asp Thr Ser Ser Phe Thr His Phe Asn
 95 100 105
 Leu Ile Pro Val Gly Leu Arg Val Val Thr Ile Gln Ser Ala Lys
 110 115 120
 Leu Gly His Tyr Met Ala Met Asn Ala Glu Gly Leu Leu Tyr Ser
 125 130 135
 Ser Pro His Phe Thr Ala Glu Cys Arg Phe Lys Glu Cys Val Phe
 140 145 150
 Glu Asn Tyr Tyr Val Leu Tyr Ala Ser Ala Leu Tyr Arg Gln Arg
 155 160 165
 Arg Ser Gly Arg Ala Trp Tyr Leu Gly Leu Asp Lys Glu Gly Gln
 170 175 180
 Val Met Lys Gly Asn Arg Val Lys Lys Thr Lys Ala Ala Ala His
 185 190 195
 Phe Leu Pro Lys Leu Leu Glu Val Ala Met Tyr Gln Glu Pro Ser
 200 205 210
 Leu His Ser Val Pro Glu Ala Ser Pro Ser Ser Pro Pro Ala Pro
 215 220 225

<210> 498
 <211> 744

<212> DNA
<213> Homo Sapien

<400> 498
atggccgcgg ccatcgctag cggcttgatc cgccagaagc ggcaggcgcg 50
ggagcagcac tgggaccggc cgtctgccag caggaggcgg agcagcccca 100
gcaagaaccg cgggctctgc aacggcaacc tggtggtatg cttctccaaa 150
gtgcgcatct tcggcctcaa gaagcgagg ttgcggcgcc aagatcccca 200
gctcaagggg atagtgaaca ggttatattg caggcaaggc tactacttgc 250
aaatgcaccc cgatggagct ctgcgtggaa ccaaggatga cagcactaat 300
tctacactct tcaacctcat accagtggga ctacgtgttg ttgccatcca 350
gggagtgaac acaggggttg atatagcat gaatggagaa ggttacctct 400
acctatcaga actttttacc cctgaatgca agtttaaaga atctgttttt 450
gaaaattatt atgtaatcta ctcatccatg ttgtacagac aacaggaatc 500
tggtagagcc tggtttttgg gattaataaa ggaaggggcaa gctatgaaag 550
ggaacagagt aaagaaaacc aaaccagcag ctcattttct acccaagcca 600
ttggaagtgt ccatgtaccg agaaccatct ttgcatgatg ttggggaaac 650
ggtcccgaag cctgggggtga cgccaagtaa aagcacaaagt gcgtctgcaa 700
taatgaatgg aggcaaacca gtcaacaaga gtaagacaac atag 744

<210> 499
<211> 247
<212> PRT
<213> Homo Sapien

<400> 499
Met Ala Ala Ala Ile Ala Ser Gly Leu Ile Arg Gln Lys Arg Gln 15
1 5 10
Ala Arg Glu Gln His Trp Asp Arg Pro Ser Ala Ser Arg Arg Arg 30
20 25 30
Ser Ser Pro Ser Lys Asn Arg Gly Leu Cys Asn Gly Asn Leu Val 45
35 40 45
Asp Ile Phe Ser Lys Val Arg Ile Phe Gly Leu Lys Lys Arg Arg 60
50 55 60
Leu Arg Arg Gln Asp Pro Gln Leu Lys Gly Ile Val Thr Arg Leu 75
65 70 75
Tyr Cys Arg Gln Gly Tyr Tyr Leu Gln Met His Pro Asp Gly Ala 90
80 85 90
Leu Asp Gly Thr Lys Asp Asp Ser Thr Asn Ser Thr Leu Phe Asn 105
95 100 105
Leu Ile Pro Val Gly Leu Arg Val Val Ala Ile Gln Gly Val Lys 120
110 115 120

Thr Gly Leu Tyr Ile Ala Met Asn Gly Glu Gly Tyr Leu Tyr Pro
 125 130 135
 Ser Glu Leu Phe Thr Pro Glu Cys Lys Phe Lys Glu Ser Val Phe
 140 145 150
 Glu Asn Tyr Tyr Val Ile Tyr Ser Ser Met Leu Tyr Arg Gln Gln
 155 160 165
 Glu Ser Gly Arg Ala Trp Phe Leu Gly Leu Asn Lys Glu Gly Gln
 170 175 180
 Ala Met Lys Gly Asn Arg Val Lys Lys Thr Lys Pro Ala Ala His
 185 190 195
 Phe Leu Pro Lys Pro Leu Glu Val Ala Met Tyr Arg Glu Pro Ser
 200 205 210
 Leu His Asp Val Gly Glu Thr Val Pro Lys Pro Gly Val Thr Pro
 215 220 225
 Ser Lys Ser Thr Ser Ala Ser Ala Ile Met Asn Gly Gly Lys Pro
 230 235 240
 Val Asn Lys Ser Lys Thr Thr
 245

<210> 500
 <211> 2906
 <212> DNA
 <213> Homo Sapien

<400> 500
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 ggctgttggg tgccctgcaa aaatgaagga tgcaggacgc agctttctcc 100
 tggaaaccgaa cgcaatggat aaactgattg tgcaagagag aaggaagaac 150
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 ttcacaaacc tctttttttt taaattttta ttccttttgg tatcaagatc 700
 atgcgttttc tcttgttctt aaccacctgg atttccatct ggatgtgtgt 750

| | | | | | |
|-------------|-------------|------------|------------|-------------|------|
| gtgatcagtc | tgaatatcaa | ctgtttgaat | tccagaagga | ccaaccaccg | 800 |
| ataaaattatg | aatgttgaac | aagatgacct | tacatccaca | gcagataaatg | 850 |
| ataggctccta | ggtttaacag | ggccctattt | gacccctctg | ttgtggtgct | 900 |
| gctggctctt | caactctctg | tgttggtctg | tctgtgctgg | gctcagacct | 950 |
| gcccttctgt | gtgctcctgc | agcaaccagt | tcagcaaggt | gatttgtgtt | 1000 |
| cggaaaaacc | tgctgtgagt | tccgtagtgc | atctccacca | acacacggct | 1050 |
| gctgaacctc | catgagaacc | aatccagat | catcaaatg | aacagcttca | 1100 |
| agcacttgag | gcacttgaa | atcctacagt | tgagtaggaa | ccatatcaga | 1150 |
| accattgaaa | ttggggcttt | caatggtctg | gcgaacctca | acactctgga | 1200 |
| actctttgac | aatcgtctta | ctaccatccc | gaatggagct | tttgtatact | 1250 |
| tgtctaaaat | gaaggagctc | tggttgcgaa | acaaccccat | tgaagcatc | 1300 |
| ccttcttatg | cttttaacag | aattcctctt | ttgcgcgac | tagacttagg | 1350 |
| ggaattgaaa | agactttcat | acatctcaga | agtgacctt | gaaggtctgt | 1400 |
| ccaacttgag | gtatttgaac | cttgccatgt | gcaaccttcg | ggaaatccct | 1450 |
| aacctcacac | cgctcataaa | actagatgag | ctggatcttt | ctgggaatca | 1500 |
| tttatctgcc | atcaggcctg | gctctttcca | gggtttgatg | caccttcaaa | 1550 |
| aactgtggat | gatacagttc | cagattcaag | tgattgaacg | gaatgccttt | 1600 |
| gacaaccttc | agtcactagt | ggagatcaac | ctggcacaca | ataatctaac | 1650 |
| attactgcct | catgacctct | tcactccctt | gcacatctca | gagcggatac | 1700 |
| attacatca | caaccccttg | aactgtaaat | gtgacatact | gtggctcagc | 1750 |
| tgggtgataa | aagacatgac | cccctcgaac | acagcttggt | gtgcccggtg | 1800 |
| taacactcct | ccaatctaa | aggggaggtc | catggagag | ctcgaccaga | 1850 |
| attacttcac | atgctatgct | ccggtgattg | tggagcccc | tcagacacct | 1900 |
| aatgtcactg | aaggcatggc | agctgagctg | aaatgtcggg | cctccacatc | 1950 |
| cctgacatct | gtatcttggc | ttactccaaa | tggaacagtc | atgacacatg | 2000 |
| gggcgtacaa | agtcgggata | gctgtgctca | gtgatggtag | gttaaaattc | 2050 |
| acaaaatgt | ctgtgcaaga | tacaggcatg | tacacatgta | tgggtgagtaa | 2100 |
| ttccgttggg | aatactactg | cttcagccac | cctgaatggt | actgcagcaa | 2150 |
| ccactactcc | tttctcttac | ttttcaaccg | tcacagtaga | gactatggaa | 2200 |
| ccgtctcagg | atgaggcacg | gaccacagat | aacaatgtgg | gtcccactcc | 2250 |
| agtggtcgac | tggggagacca | ccaatgtgac | cacctctctc | acaccacaga | 2300 |
| gcacaaagtc | gacagagaaa | accttcacca | tcccagtgac | tgatataaac | 2350 |

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 tgactgggct aaatctactg tttcaaaaaa gtgtctttac aaaaaacaa 2850
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 caaaaa 2906

<210> 501
 <211> 640
 <212> PRT
 <213> Homo Sapien

<400> 501
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 Leu Ala Leu Gln Leu Leu Val Val Ala Gly Leu Val Arg Ala Gln
 35 40 45
 Thr Cys Pro Ser Val Cys Ser Cys Ser Asn Gln Phe Ser Lys Val
 50 55 60
 Ile Cys Val Arg Lys Asn Leu Arg Glu Val Pro Asp Gly Ile Ser
 65 70 75
 Thr Asn Thr Arg Leu Leu Asn Leu His Glu Asn Gln Ile Gln Ile
 80 85 90
 Ile Lys Val Asn Ser Phe Lys His Leu Arg His Leu Glu Ile Leu
 95 100 105
 Gln Leu Ser Arg Asn His Ile Arg Thr Ile Glu Ile Gly Ala Phe
 110 115 120
 Asn Gly Leu Ala Asn Leu Asn Thr Leu Glu Leu Phe Asp Asn Arg
 125 130 135
 Leu Thr Thr Ile Pro Asn Gly Ala Phe Val Tyr Leu Ser Lys Leu
 140 145 150
 Lys Glu Leu Trp Leu Arg Asn Asn Pro Ile Glu Ser Ile Pro Ser
 155 160 165

| | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Tyr | Ala | Phe | Asn | Arg | Ile | Pro | Ser | Leu | Arg | Arg | Leu | Asp | Leu | Gly | 170 | 175 | 180 |
| Glu | Leu | Lys | Arg | Leu | Ser | Tyr | Ile | Ser | Glu | Gly | Ala | Phe | Glu | Gly | 185 | 190 | 195 |
| Leu | Ser | Asn | Leu | Arg | Tyr | Leu | Asn | Leu | Ala | Met | Cys | Asn | Leu | Arg | 200 | 205 | 210 |
| Glu | Ile | Pro | Asn | Leu | Thr | Pro | Leu | Ile | Lys | Leu | Asp | Glu | Leu | Asp | 215 | 220 | 225 |
| Leu | Ser | Gly | Asn | His | Leu | Ser | Ala | Ile | Arg | Pro | Gly | Ser | Phe | Gln | 230 | 235 | 240 |
| Gly | Leu | Met | His | Leu | Gln | Lys | Leu | Trp | Met | Ile | Gln | Ser | Gln | Ile | 245 | 250 | 255 |
| Gln | Val | Ile | Glu | Arg | Asn | Ala | Phe | Asp | Asn | Leu | Gln | Ser | Leu | Val | 260 | 265 | 270 |
| Glu | Ile | Asn | Leu | Ala | His | Asn | Asn | Leu | Thr | Leu | Leu | Pro | His | Asp | 275 | 280 | 285 |
| Leu | Phe | Thr | Pro | Leu | His | His | Leu | Glu | Arg | Ile | His | Leu | His | His | 290 | 295 | 300 |
| Asn | Pro | Trp | Asn | Cys | Asn | Cys | Asp | Ile | Leu | Trp | Leu | Ser | Trp | Trp | 305 | 310 | 315 |
| Ile | Lys | Asp | Met | Ala | Pro | Ser | Asn | Thr | Ala | Cys | Cys | Ala | Arg | Cys | 320 | 325 | 330 |
| Asn | Thr | Pro | Pro | Asn | Leu | Lys | Gly | Arg | Tyr | Ile | Gly | Glu | Leu | Asp | 335 | 340 | 345 |
| Gln | Asn | Tyr | Phe | Thr | Cys | Tyr | Ala | Pro | Val | Ile | Val | Glu | Pro | Pro | 350 | 355 | 360 |
| Ala | Asp | Leu | Asn | Val | Thr | Glu | Gly | Met | Ala | Ala | Glu | Leu | Lys | Cys | 365 | 370 | 375 |
| Arg | Ala | Ser | Thr | Ser | Leu | Thr | Ser | Val | Ser | Trp | Ile | Thr | Pro | Asn | 380 | 385 | 390 |
| Gly | Thr | Val | Met | Thr | His | Gly | Ala | Tyr | Lys | Val | Arg | Ile | Ala | Val | 395 | 400 | 405 |
| Leu | Ser | Asp | Gly | Thr | Leu | Asn | Phe | Thr | Asn | Val | Thr | Val | Gln | Asp | 410 | 415 | 420 |
| Thr | Gly | Met | Tyr | Thr | Cys | Met | Val | Ser | Asn | Ser | Val | Gly | Asn | Thr | 425 | 430 | 435 |
| Thr | Ala | Ser | Ala | Thr | Leu | Asn | Val | Thr | Ala | Ala | Thr | Thr | Thr | Pro | 440 | 445 | 450 |
| Phe | Ser | Tyr | Phe | Ser | Thr | Val | Thr | Val | Glu | Thr | Met | Glu | Pro | Ser | 455 | 460 | 465 |
| Gln | Asp | Glu | Ala | Arg | Thr | Thr | Asp | Asn | Asn | Val | Gly | Pro | Thr | Pro | 470 | 475 | 480 |

Val Val Asp Trp Glu Thr Thr Asn Val Thr Thr Ser Leu Thr Pro
485 490 495

Gln Ser Thr Arg Ser Thr Glu Lys Thr Phe Thr Ile Pro Val Thr
500 505 510

Asp Ile Asn Ser Gly Ile Pro Gly Ile Asp Glu Val Met Lys Thr
515 520 525

Thr Lys Ile Ile Ile Gly Cys Phe Val Ala Ile Thr Leu Met Ala
530 535 540

Ala Val Met Leu Val Ile Phe Tyr Lys Met Arg Lys Gln His His
545 550 555

Arg Gln Asn His His Ala Pro Thr Arg Thr Val Glu Ile Ile Asn
560 565 570

Val Asp Asp Glu Ile Thr Gly Asp Thr Pro Met Glu Ser His Leu
575 580 585

Pro Met Pro Ala Ile Glu His Glu His Leu Asn His Tyr Asn Ser
590 595 600

Tyr Lys Ser Pro Phe Asn His Thr Thr Thr Val Asn Thr Ile Asn
605 610 615

Ser Ile His Ser Ser Val His Glu Pro Leu Leu Ile Arg Met Asn
620 625 630

Ser Lys Asp Asn Val Gln Glu Thr Gln Ile
635 640

<210> 502
<211> 2458
<212> DNA
<213> Homo Sapien

<400> 502
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agcaactgag cggggaagcg cccgcgtccg gggatcgga gtccctcct 200
ccttctctc ttgctagttt cctactatgt tggaaccttg ggaactcaca 250
ctgagatcaa gagagtggca gaggaaaagg tcactttgcc ctgccaccat 300
caactggggc ttocagaaaa agacactctg gatattgaat ggctgctcac 350
cgataatgaa gggaacccaa aagtgggtgat cacttactcc agtcgtcatg 400
tctacaataa cttgactgag gaacagaagg gccgagtggc ctttgcttcc 450
aatttcctgg caggagatgc ctcccttgag attgaacctc tgaagccag 500
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<210> 503
 <211> 373
 <212> PRT
 <213> Homo Sapien

<400> 503
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 20 25 30
 Val Thr Leu Pro Cys His His Gln Leu Gly Leu Pro Glu Lys Asp
 35 40 45
 Thr Leu Asp Ile Glu Trp Leu Leu Thr Asp Asn Glu Gly Asn Gln
 50 55 60
 Lys Val Val Ile Thr Tyr Ser Ser Arg His Val Tyr Asn Asn Leu
 65 70 75
 Thr Glu Glu Gln Lys Gly Arg Val Ala Phe Ala Ser Asn Phe Leu
 80 85 90
 Ala Gly Asp Ala Ser Leu Gln Ile Glu Pro Leu Lys Pro Ser Asp
 95 100 105
 Glu Gly Arg Tyr Thr Cys Lys Val Lys Asn Ser Gly Arg Tyr Val
 110 115 120
 Trp Ser His Val Ile Leu Lys Val Leu Val Arg Pro Ser Lys Pro
 125 130 135
 Lys Cys Glu Leu Glu Gly Glu Leu Thr Glu Gly Ser Asp Leu Thr
 140 145 150
 Leu Gln Cys Glu Ser Ser Ser Gly Thr Glu Pro Ile Val Tyr Tyr
 155 160 165
 Trp Gln Arg Ile Arg Glu Lys Glu Gly Glu Asp Glu Arg Leu Pro
 170 175 180
 Pro Lys Ser Arg Ile Asp Tyr Asn His Pro Gly Arg Val Leu Leu
 185 190 195
 Gln Asn Leu Thr Met Ser Tyr Ser Gly Leu Tyr Gln Cys Thr Ala
 200 205 210
 Gly Asn Glu Ala Gly Lys Glu Ser Cys Val Val Arg Val Thr Val
 215 220 225

Gln Tyr Val Gln Ser Ile Gly Met Val Ala Gly Ala Val Thr Gly
 230 235 240
 Ile Val Ala Gly Ala Leu Leu Ile Phe Leu Leu Val Trp Leu Leu
 245 250 255
 Ile Arg Arg Lys Asp Lys Glu Arg Tyr Glu Glu Glu Glu Arg Pro
 260 265 270
 Asn Glu Ile Arg Glu Asp Ala Glu Ala Pro Lys Ala Arg Leu Val
 275 280 285
 Lys Pro Ser Ser Ser Ser Ser Gly Ser Arg Ser Ser Arg Ser Gly
 290 295 300
 Ser Ser Ser Thr Arg Ser Thr Ala Asn Ser Ala Ser Arg Ser Gln
 305 310 315
 Arg Thr Leu Ser Thr Asp Ala Ala Pro Gln Pro Gly Leu Ala Thr
 320 325 330
 Gln Ala Tyr Ser Leu Val Gly Pro Glu Val Arg Gly Ser Glu Pro
 335 340 345
 Lys Lys Val His His Ala Asn Leu Thr Lys Ala Glu Thr Thr Pro
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<210> 504
 <211> 3060
 <212> DNA
 <213> Homo Sapien

<400> 504
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 tgaagagatg attgaaaaag ccaaaggggg aactgcctat ctgccatgca 200
 aatttacgct tagtcccgaa gaccagggac cgctggacat cgagtggctg 250
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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3000
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 3050
aaaaaaaaa 3060

<210> 505
<211> 352
<212> PRT
<213> Homo Sapien

<400> 505
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Phe Ala Arg Ser Leu Ser Ile Thr Thr Pro Glu Glu Met Ile Glu
20 25 30
Lys Ala Lys Gly Glu Thr Ala Tyr Leu Pro Cys Lys Phe Thr Leu
35 40 45
Ser Pro Glu Asp Gln Gly Pro Leu Asp Ile Glu Trp Leu Ile Ser
50 55 60
Pro Ala Asp Asn Gln Lys Val Asp Gln Val Ile Ile Leu Tyr Ser
65 70 75
Gly Asp Lys Ile Tyr Asp Asp Tyr Tyr Pro Asp Leu Lys Gly Arg
80 85 90
Val His Phe Thr Ser Asn Asp Leu Lys Ser Gly Asp Ala Ser Ile
95 100 105
Asn Val Thr Asn Leu Gln Leu Ser Asp Ile Gly Thr Tyr Gln Cys
110 115 120
Lys Val Lys Lys Ala Pro Gly Val Ala Asn Lys Lys Ile His Leu

| | | | | | |
|---|-----|--|-----|--|-----|
| | 125 | | 130 | | 135 |
| Val Val Leu Val Lys Pro Ser Gly Ala Arg Cys Tyr Val Asp Gly | 140 | | 145 | | 150 |
| Ser Glu Glu Ile Gly Ser Asp Phe Lys Ile Lys Cys Glu Pro Lys | 155 | | 160 | | 165 |
| Glu Gly Ser Leu Pro Leu Gln Tyr Glu Trp Gln Lys Leu Ser Asp | 170 | | 175 | | 180 |
| Ser Gln Lys Met Pro Thr Ser Trp Leu Ala Glu Met Thr Ser Ser | 185 | | 190 | | 195 |
| Val Ile Ser Val Lys Asn Ala Ser Ser Glu Tyr Ser Gly Thr Tyr | 200 | | 205 | | 210 |
| Ser Cys Thr Val Arg Asn Arg Val Gly Ser Asp Gln Cys Leu Leu | 215 | | 220 | | 225 |
| Arg Leu Asn Val Val Pro Pro Ser Asn Lys Ala Gly Leu Ile Ala | 230 | | 235 | | 240 |
| Gly Ala Ile Ile Gly Thr Leu Leu Ala Leu Ala Leu Ile Gly Leu | 245 | | 250 | | 255 |
| Ile Ile Phe Cys Cys Arg Lys Lys Arg Arg Glu Glu Lys Tyr Glu | 260 | | 265 | | 270 |
| Lys Glu Val His His Asp Ile Arg Glu Asp Val Pro Pro Pro Lys | 275 | | 280 | | 285 |
| Ser Arg Thr Ser Thr Ala Arg Ser Tyr Ile Gly Ser Asn His Ser | 290 | | 295 | | 300 |
| Ser Leu Gly Ser Met Ser Pro Ser Asn Met Glu Gly Tyr Ser Lys | 305 | | 310 | | 315 |
| Thr Gln Tyr Asn Gln Val Pro Ser Glu Asp Phe Glu Arg Thr Pro | 320 | | 325 | | 330 |
| Gln Ser Pro Thr Leu Pro Pro Ala Lys Phe Lys Tyr Pro Tyr Lys | 335 | | 340 | | 345 |
| Thr Asp Gly Ile Thr Val Val | 350 | | | | |

<210> 506
 <211> 1705
 <212> DNA
 <213> Homo Sapien

<400> 506
 tgaatgact tccacggctg ggacgggaac cttccacca cagctatgcc 50
 tctgattggt gaatggtgaa ggtgcctgtc taacttttct gtaaaaagaa 100
 ccagctgcct ccaggcagcc agccctcaag catcacttac aggaccagag 150
 ggacaagaca tgactgtgat gaggagctgc ttctgccaat ttaaccacaa 200
 gaagaattga ggctgcttg gaggaaggcc aggaggaaca cgagactgag 250

agatgaattt tcaacagagg ctgcaaagcc tgtggacttt agccagaccc 300
 ttctgccttc ctttgcctgc gacagcctct caaatgcaga tgggtgtgct 350
 cccttgccgt ggttttacc tgcttctctg gagccaggta tcaggggccc 400
 agggccaaga attccacttt gggccctgcc aagtgaaggg ggtgttccc 450
 cagaaactgt ggggaagcctt ctgggctgtg aaagacacta tgcaagctca 500
 ggataacatc acgagtgcgc ggctgctgca gcaggaggtt ctgcagaacg 550
 tctcggatgc tgagagctgt taccttctcc acacctgct ggagtctac 600
 ttgaaaactg ttttcaaaaa ccaccacaat agaacagttg aagtcaggac 650
 tctgaagtca ttctctactc tggccaacaa ctttgttctc atcgtgtcac 700
 aactgcaacc cagtcaagaa aatgagatgt tttccatcag agacagtcca 750
 cacaggcggt ttctgctatt ccggagagca ttcaaacagt tggacgtaga 800
 agcagctctg accaaagccc ttggggaagt ggacattctt ctgacctgga 850
 tgcagaatt ctacaagctc tgaatgtcta gaccaggacc tccctcccc 900
 tggcaactgt ttgttcctg tgtcatttca aacagttctc ctctctatgc 950
 tgttcaactg acacttcacg cccttggcca tgggtcccat tcttggccca 1000
 ggattattgt caaagaagtc attctttaag cagcgccagt gacagtcagg 1050
 gaaggtgcct ctggatgctg tgaagagtct acagagaaga ttctgtatt 1100
 tattacaact ctatttaatt aatgtcagta ttcaactga agttctat 1150
 atttgtgaga ctgtaagtta catgaaggca gcagaatatt gtgccccatg 1200
 cttctttacc cctcacaato cttggccacg tgtggggcag tggatgggtg 1250
 cttagtaagt acttaataaa ctgtggtgct ttttttgcc tgtctttgga 1300
 ttgttaaaaa acagagaggg atgcttggat gtaaaactga acttcagagc 1350
 atgaaaaatca cactgtcttc tgatatctgc agggacagag cattgggggtg 1400
 ggggtaaggt gcatctgttt gaaaagtata cgataaaatg tggattaaag 1450
 tgcccagcac aaagcagatc ctcaataaac atttcatttc ccaccacac 1500
 tcgcccagctc accccatcat cctttccctc tggtgccctc cttttttttt 1550
 tatctatgct attcttccct aatcttcac ttgagtgtca agctgacett 1600
 gctgatgggt acattgcacc tggatgtact atccaatctg tgatgacatt 1650
 ccctgctaatt aaaagacaac ataactccaa aaaaaaaaaa aaaaaaaaaa 1700
 aaaaa 1705

<210> 507
 <211> 206
 <212> PRT

<213> Homo Sapien

<400> 507

Met Asn Phe Gln Gln Arg Leu Gln Ser Leu Trp Thr Leu Ala Arg
1 5 10 15
Pro Phe Cys Pro Pro Leu Leu Ala Thr Ala Ser Gln Met Gln Met
20 25 30
Val Val Leu Pro Cys Leu Gly Phe Thr Leu Leu Trp Ser Gln
35 40 45
Val Ser Gly Ala Gln Gly Gln Glu Phe His Phe Gly Pro Cys Gln
50 55 60
Val Lys Gly Val Val Pro Gln Lys Leu Trp Glu Ala Phe Trp Ala
65 70 75
Val Lys Asp Thr Met Gln Ala Gln Asp Asn Ile Thr Ser Ala Arg
80 85 90
Leu Leu Gln Gln Glu Val Leu Gln Asn Val Ser Asp Ala Glu Ser
95 100 105
Cys Tyr Leu Val His Thr Leu Leu Glu Phe Tyr Leu Lys Thr Val
110 115 120
Phe Lys Asn His His Asn Arg Thr Val Glu Val Arg Thr Leu Lys
125 130 135
Ser Phe Ser Thr Leu Ala Asn Asn Phe Val Leu Ile Val Ser Gln
140 145 150
Leu Gln Pro Ser Gln Glu Asn Glu Met Phe Ser Ile Arg Asp Ser
155 160 165
Ala His Arg Arg Phe Leu Leu Phe Arg Arg Ala Phe Lys Gln Leu
170 175 180
Asp Val Glu Ala Ala Leu Thr Lys Ala Leu Gly Glu Val Asp Ile
185 190 195
Leu Leu Thr Trp Met Gln Lys Phe Tyr Lys Leu
200 205

<210> 508

<211> 924

<212> DNA

<213> Homo Sapien

<400> 508

aaggagcagc ccgcaagcac caagtgaag gcatgaagtt acagtgtgtt 50
tcctcttggc tcctgggtac aatactgata ttgtgctcag tagacaacca 100
cggtctcagg agatgtctga tttccacaga catgcaccat atagaagaga 150
gtttccaaga aatcaaaaga gccatccaag ctaaggacac ctccccaaat 200
gtcactatcc tgtccacatt ggagactctg cagatcatta agcccttaga 250
tgtgtgctgc gtgaccaaga acctcctggc gttctactgt gacaggggtg 300

tcaaggatca tcaggagcca aacccccaaa tcttgagaaa aatcagcagc 350
 attgccaaact ctttctctca catgcagaaa actctgcggc aatgtcagga 400
 acagaggcag tgtcaactgca ggaggaagc caccaatgcc accagagtca 450
 tccatgacaa ctatgatcag ctggagggtcc acgctgctgc cattaatatcc 500
 ctggggagagc tcgacgtctt tctagcctgg attaataaga atcatgaagt 550
 aatgttctca gcttgatgac aaggaaacctg tatagtgtgc cagggatgaa 600
 caccctctgt gcggtttact ttggggagaca gccacacttg aaggggaagg 650
 agatggggaa ggccctctgc agctgaaagt cccactggct ggctcaggc 700
 tgtcttattc cgcttgaaaa taggcaaaaa gtctactgtg gtatttgtaa 750
 taaactctat ctgctgaaag ggctgcagg ccatcctggg agtaaagggc 800
 tgccttccca tctaatttat tgtaaagtca tatagtcatt gtctgtgatg 850
 tgagccaagt gatacctgt agtacacatt gtactgagtg gttttctga 900
 ataaattcca tattttacct atga 924

<210> 509
 <211> 177
 <212> PRT
 <213> Homo Sapien

<400> 509
 Met Lys Leu Gln Cys Val Ser Leu Trp Leu Leu Gly Thr Ile Leu
 1 5 10 15
 Ile Leu Cys Ser Val Asp Asn His Gly Leu Arg Arg Cys Leu Ile
 20 25 30
 Ser Thr Asp Met His His Ile Glu Glu Ser Phe Gln Glu Ile Lys
 35 40 45
 Arg Ala Ile Gln Ala Lys Asp Thr Phe Pro Asn Val Thr Ile Leu
 50 55 60
 Ser Thr Leu Glu Thr Leu Gln Ile Ile Lys Pro Leu Asp Val Cys
 65 70 75
 Cys Val Thr Lys Asn Leu Leu Ala Phe Tyr Val Asp Arg Val Phe
 80 85 90
 Lys Asp His Gln Glu Pro Asn Pro Lys Ile Leu Arg Lys Ile Ser
 95 100 105
 Ser Ile Ala Asn Ser Phe Leu Tyr Met Gln Lys Thr Leu Arg Gln
 110 115 120
 Cys Gln Glu Gln Arg Gln Cys His Cys Arg Gln Glu Ala Thr Asn
 125 130 135
 Ala Thr Arg Val Ile His Asp Asn Tyr Asp Gln Leu Glu Val His
 140 145 150
 Ala Ala Ala Ile Lys Ser Leu Gly Glu Leu Asp Val Phe Leu Ala

Trp Ile Asn Lys Asn His Glu Val Met Phe Ser Ala
170 175

<210> 510
<211> 996
<212> DNA
<213> Homo Sapien

<400> 510
cccgtagcaa gaggtagcga agtagcgact atagagtcga tagggccact 50
tggtcttggt agaagcgagg tacaattaat acataacctt atgtatcata 100
cacatacgat ttaggtgaca ctatagaata acatccactt tgcctttctc 150
tccacaggtg tccactccca ggtccaactg caccctcggtt ctatcgataa 200
ttctcagcacc agccactcag agcaggggcac gatgttgggg gcccgccctca 250
ggctctgggt ctgtgccttg tgcagcgtct gcagcatgag cgtctcaga 300
gcctatccca atgcctcccc actgctcggc tccagctggg gtggcctgat 350
ccacctgtac acagccacag ccaggaacag ctaccacctg cagatccaca 400
agaatggcca tgtggatggc gcaccccatc agaccatcta cagtgccttg 450
atgatcagat cagaggatgc tggctttgtg gtgattacag gtgtgatgag 500
cagaagatac ctctgcatgg atttcagagg caacattttt ggatcacact 550
atttcgacct ggagaactgc aggttccaac accagacgct ggaaaacggg 600
tacgacgtct accactctcc tcagtatcac ttctgtgtca gtctgggccc 650
ggcgaagaga gcttctctgc caggcatgaa cccacccccg tactccactg 700
ttctgtcccc gaggaacgag atccccctaa ttcacttcaa ccccccata 750
ccacggcgcc acacccggag cgccgaggac gactcggagc gggaccccct 800
gaacgtgctg aagccccggg cccggatgac cccggccccg gcctctctgt 850
cacaggagct cccgagcgcc gaggacaaca gcccgatggc cagtacacca 900
ttagggtggt tcaggggcgg tcgagtgaac acgcacgctg ggggaacggg 950
cccgaaggc tgcggccctc tcgccaagtt catctagggt cgctgg 996

<210> 511
<211> 251
<212> PRT
<213> Homo Sapien

<400> 511
Met Leu Gly Ala Arg Leu Arg Leu Trp Val Cys Ala Leu Cys Ser
1 5 10 15
Val Cys Ser Met Ser Val Leu Arg Ala Tyr Pro Asn Ala Ser Pro
20 25 30

Leu Leu Gly Ser Ser Trp Gly Gly Leu Ile His Leu Tyr Thr Ala
 35 40 45
 Thr Ala Arg Asn Ser Tyr His Leu Gln Ile His Lys Asn Gly His
 50 55 60
 Val Asp Gly Ala Pro His Gln Thr Ile Tyr Ser Ala Leu Met Ile
 65 70 75
 Arg Ser Glu Asp Ala Gly Phe Val Val Ile Thr Gly Val Met Ser
 80 85 90
 Arg Arg Tyr Leu Cys Met Asp Phe Arg Gly Asn Ile Phe Gly Ser
 95 100 105
 His Tyr Phe Asp Pro Glu Asn Cys Arg Phe Gln His Gln Thr Leu
 110 115 120
 Glu Asn Gly Tyr Asp Val Tyr His Ser Pro Gln Tyr His Phe Leu
 125 130 135
 Val Ser Leu Gly Arg Ala Lys Arg Ala Phe Leu Pro Gly Met Asn
 140 145 150
 Pro Pro Pro Tyr Ser Gln Phe Leu Ser Arg Arg Asn Glu Ile Pro
 155 160 165
 Leu Ile His Phe Asn Thr Pro Ile Pro Arg Arg His Thr Arg Ser
 170 175 180
 Ala Glu Asp Asp Ser Glu Arg Asp Pro Leu Asn Val Leu Lys Pro
 185 190 195
 Arg Ala Arg Met Thr Pro Ala Pro Ala Ser Cys Ser Gln Glu Leu
 200 205 210
 Pro Ser Ala Glu Asp Asn Ser Pro Met Ala Ser Asp Pro Leu Gly
 215 220 225
 Val Val Arg Gly Gly Arg Val Asn Thr His Ala Gly Gly Thr Gly
 230 235 240
 Pro Glu Gly Cys Arg Pro Phe Ala Lys Phe Ile
 245 250

<210> 512
 <211> 2015
 <212> DNA
 <213> Homo Sapien

<400> 512
 ggaaaaggta ccgcgcgagag acagccagca gttctgtgga gcagcgggtgg 50
 ccggctagga tgggctgtct ctgggggtctg gctctgcccc ttttcttctt 100
 ctgctgggag gttgggggtct ctgggagctc tgcaggcccc agcaccgcga 150
 gaggcagacac tgcgatgaca acggacgaca cagaagtgcc cgctatgact 200
 ctaggaccgg gccacgcgcg tctgaaaact caaacgctga gcgctgagac 250
 ctcttctagg gcctcaaccc cagccggccc cattccagaa gcagagacca 300

ggggagccaa gagaatttcc cctgcaagag agaccaggag ttccacaaaa 350
 acatctccca acttcatggt gctgatcgcc acctccgtgg agacatcagc 400
 cgccagtggc agccccgagg gagctggaat gaccacagtt cagaccatca 450
 caggcagtga tcccaggaa gccatctttg acaccctttg caccgatgac 500
 agctctgaag aggcaaagac actcacaatg gacatattga cattggctca 550
 caoctccaca gaagctaagg gctgtccto agagagcagt gcctcttcog 600
 acggccccc tccagtcac accccgtcac gggcctcaga gacgagcgcc 650
 tcttcgacg gcccccaccc agtcacacc ccgtcacggg cctcagagag 700
 cagcgctct tcgacggcc cccatccagt catcaccccg tcattggtccc 750
 cgggatctga tgtcactctc ctgcgtgaag ccctggtgac tgtcacaaac 800
 atcgaggtta ttaattgcag catcacagaa atagaacaa caacttccag 850
 catccctggg gcctcagaca tagatctcat cccacggaa ggggtgaagg 900
 cctcgtccac ctccgatcca ccagctctgc ctgactccac tgaagcaaaa 950
 ccacacatca ctgaggtcac agcctctgcc gagaccctgt ccacagccgg 1000
 caccacagag tcagctgcac ctcatgccac ggttgggacc ccactcccca 1050
 ctaacagcgc cacagaaaga gaagtgcag caccggggc cagcaccctc 1100
 agtgagctc tggtcacagt tagcaggaat cccctggaag aaacctcagc 1150
 cctctctgtt gagacaccaa gttacgtcaa agtctcagga gcagctccgg 1200
 tctccataga ggctgggtca gcagtgggca aaacaacttc ctttgcctgg 1250
 agctctgctt cctcctacag ccctcggaa gccgcctca agaacttcac 1300
 ccctcagag acaccgacca tggacatcgc aaccaagggg cccttcccca 1350
 ccagcaggga ccctcttct tctgtccctc cgactacaac caacgacgc 1400
 cgaggggaca acagcacctt agccaagatc acaacctcag cgaagaccac 1450
 gatgaagccc caacagccac gccacgact gcccgacga ggcgaccac 1500
 agacgtgagt goagtgaaa atggaggttt cctcctcctg cggctgagtg 1550
 tggcttcccc ggaagacctc actgaaccca gagtggcaga aaggctgatg 1600
 cagcagctcc accgggaact ccacgccca gcgcctoact tccaggtctc 1650
 cttactcgct gtcaggagag gctaacggac atcagctgca gccaggcatg 1700
 tcccgatgc caaaagaggg tgctgccct agcctggggc cccaccgaca 1750
 gactgcagct gcgttactgt gctgagaggt acccagaagg ttcccatgaa 1800
 gggcagcatg tccaagcccc taaccccgaga tgtggcaaca ggacctcgc 1850
 tcacatccac cggagtgtat gtatggggag gggcttcacc tgttccaga 1900

gggtgccttg gactcacctt ggcacatggt ctgtgtttca gtaaagagag 1950
 acctgatcac ccatctgtgt gcttccatcc tgcattaaaa ttcactcagt 2000
 gtggcccaaa aaaaa 2015

<210> 513
 <211> 482
 <212> PRT
 <213> Homo Sapien

<400> 513
 Met Gly Cys Leu Trp Gly Leu Ala Leu Pro Leu Phe Phe Phe Cys
 1 5 10 15
 Trp Glu Val Gly Val Ser Gly Ser Ser Ala Gly Pro Ser Thr Arg
 20 25 30
 Arg Ala Asp Thr Ala Met Thr Thr Asp Asp Thr Glu Val Pro Ala
 35 40 45
 Met Thr Leu Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu
 50 55 60
 Ser Ala Glu Thr Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile
 65 70 75
 Pro Glu Ala Glu Thr Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg
 80 85 90
 Glu Thr Arg Ser Phe Thr Lys Thr Ser Pro Asn Phe Met Val Leu
 95 100 105
 Ile Ala Thr Ser Val Glu Thr Ser Ala Ala Ser Gly Ser Pro Glu
 110 115 120
 Gly Ala Gly Met Thr Thr Val Gln Thr Ile Thr Gly Ser Asp Pro
 125 130 135
 Glu Glu Ala Ile Phe Asp Thr Leu Cys Thr Asp Asp Ser Ser Glu
 140 145 150
 Glu Ala Lys Thr Leu Thr Met Asp Ile Leu Thr Leu Ala His Thr
 155 160 165
 Ser Thr Glu Ala Lys Gly Leu Ser Ser Glu Ser Ser Ala Ser Ser
 170 175 180
 Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg Ala Ser Glu Ser
 185 190 195
 Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg
 200 205 210
 Ala Ser Glu Ser Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile
 215 220 225
 Thr Pro Ser Trp Ser Pro Gly Ser Asp Val Thr Leu Leu Ala Glu
 230 235 240
 Ala Leu Val Thr Val Thr Asn Ile Glu Val Ile Asn Cys Ser Ile
 245 250 255

Thr Glu Ile Glu Thr Thr Thr Ser Ser Ile Pro Gly Ala Ser Asp
 260 265 270
 Ile Asp Leu Ile Pro Thr Glu Gly Val Lys Ala Ser Ser Thr Ser
 275 280 285
 Asp Pro Pro Ala Leu Pro Asp Ser Thr Glu Ala Lys Pro His Ile
 290 295 300
 Thr Glu Val Thr Ala Ser Ala Glu Thr Leu Ser Thr Ala Gly Thr
 305 310 315
 Thr Glu Ser Ala Ala Pro His Ala Thr Val Gly Thr Pro Leu Pro
 320 325 330
 Thr Asn Ser Ala Thr Glu Arg Glu Val Thr Ala Pro Gly Ala Thr
 335 340 345
 Thr Leu Ser Gly Ala Leu Val Thr Val Ser Arg Asn Pro Leu Glu
 350 355 360
 Glu Thr Ser Ala Leu Ser Val Glu Thr Pro Ser Tyr Val Lys Val
 365 370 375
 Ser Gly Ala Ala Pro Val Ser Ile Glu Ala Gly Ser Ala Val Gly
 380 385 390
 Lys Thr Thr Ser Phe Ala Gly Ser Ser Ala Ser Ser Tyr Ser Pro
 395 400 405
 Ser Glu Ala Ala Leu Lys Asn Phe Thr Pro Ser Glu Thr Pro Thr
 410 415 420
 Met Asp Ile Ala Thr Lys Gly Pro Phe Pro Thr Ser Arg Asp Pro
 425 430 435
 Leu Pro Ser Val Pro Pro Thr Thr Thr Asn Ser Ser Arg Gly Thr
 440 445 450
 Asn Ser Thr Leu Ala Lys Ile Thr Thr Ser Ala Lys Thr Thr Met
 455 460 465
 Lys Pro Gln Gln Pro Arg Pro Arg Leu Pro Gly Arg Gly Arg Pro
 470 475 480
 Gln Thr

<210> 514
 <211> 2284
 <212> DNA
 <213> Homo Sapien

<400> 514
 gcggagcatc cgctgcggtc ctgcgcgaga ccccgcgcg gattcgccgg 50
 tccttcocgc gggcgcgaca gagctgtcct cgcacctgga tggcagcagg 100
 ggcgcgcggg tcctctcgac gccagagaga aatctcatca tctgtgcagc 150
 cttcttaaa gaaactaaga ccagaggagg gattatcctt gacctttgaa 200
 gaccaaact aaactgaaat ttaaaatgtt ctcgggggga gaaggagact 250

ggtcaggctg gtctcaaact cctgacctag tgatccacce tectcggcct 1900
 cccaaagtgc tgggattaca ggcatgagcc accacagctg gcccccttct 1950
 gttttatgtt tggtttttga gaaggaatga agtgggaacc aaattaggta 2000
 attttgggta atctgtctct aaaatattag ctaaaaaaca agctctatgt 2050
 aaagtaataa agtataattg ccatataaat ttcaaaattc aactggcttt 2100
 tatgcaaaga aacagggttag gacatctagg ttccaattca ttcacattct 2150
 tggttccaga taaaatcaac tgtttatatc aatttctaag ggatttgctt 2200
 ttctttttat atggattcct ttaaaactta ttccagatgt agttccttcc 2250
 aattaaatat ttgaataaat cttttgttac tcaa 2284

<210> 515

<211> 431

<212> PRT

<213> Homo Sapien

<400> 515

| | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Met | Phe | Phe | Gly | Gly | Glu | Gly | Ser | Leu | Thr | Tyr | Thr | Leu | Val | Ile |
| 1 | | | | 5 | | | | | 10 | | | | 15 | |
| Ile | Cys | Phe | Leu | Thr | Leu | Arg | Leu | Ser | Ala | Ser | Gln | Asn | Cys | Leu |
| | | | 20 | | | | | | 25 | | | | 30 | |
| Lys | Lys | Ser | Leu | Glu | Asp | Val | Val | Ile | Asp | Ile | Gln | Ser | Ser | Leu |
| | | | 35 | | | | | | 40 | | | | 45 | |
| Ser | Lys | Gly | Ile | Arg | Gly | Asn | Glu | Pro | Val | Tyr | Thr | Ser | Thr | Gln |
| | | | 50 | | | | | | 55 | | | | 60 | |
| Glu | Asp | Cys | Ile | Asn | Ser | Cys | Cys | Ser | Thr | Lys | Asn | Ile | Ser | Gly |
| | | | 65 | | | | | | 70 | | | | 75 | |
| Asp | Lys | Ala | Cys | Asn | Leu | Met | Ile | Phe | Asp | Thr | Arg | Lys | Thr | Ala |
| | | | 80 | | | | | | 85 | | | | 90 | |
| Arg | Gln | Pro | Asn | Cys | Tyr | Leu | Phe | Phe | Cys | Pro | Asn | Glu | Glu | Ala |
| | | | 95 | | | | | | 100 | | | | 105 | |
| Cys | Pro | Leu | Lys | Pro | Ala | Lys | Gly | Leu | Met | Ser | Tyr | Arg | Ile | Ile |
| | | | 110 | | | | | | 115 | | | | 120 | |
| Thr | Asp | Phe | Pro | Ser | Leu | Thr | Arg | Asn | Leu | Pro | Ser | Gln | Glu | Leu |
| | | | 125 | | | | | | 130 | | | | 135 | |
| Pro | Gln | Glu | Asp | Ser | Leu | Leu | His | Gly | Gln | Phe | Ser | Gln | Ala | Val |
| | | | 140 | | | | | | 145 | | | | 150 | |
| Thr | Pro | Leu | Ala | His | His | His | Thr | Asp | Tyr | Ser | Lys | Pro | Thr | Asp |
| | | | 155 | | | | | | 160 | | | | 165 | |
| Ile | Ser | Trp | Arg | Asp | Thr | Leu | Ser | Gln | Lys | Phe | Gly | Ser | Ser | Asp |
| | | | 170 | | | | | | 175 | | | | 180 | |
| His | Leu | Glu | Lys | Leu | Phe | Lys | Met | Asp | Glu | Ala | Ser | Ala | Gln | Leu |
| | | | 185 | | | | | | 190 | | | | 195 | |

Leu Ala Tyr Lys Glu Lys Gly His Ser Gln Ser Ser Gln Phe Ser
 200 205 210
 Ser Asp Gln Glu Ile Ala His Leu Leu Pro Glu Asn Val Ser Ala
 215 220 225
 Leu Pro Ala Thr Val Ala Val Ala Ser Pro His Thr Thr Ser Ala
 230 235 240
 Thr Pro Lys Pro Ala Thr Leu Leu Pro Thr Asn Ala Ser Val Thr
 245 250 255
 Pro Ser Gly Thr Ser Gln Pro Gln Leu Ala Thr Thr Ala Pro Pro
 260 265 270
 Val Thr Thr Val Thr Ser Gln Pro Pro Thr Thr Leu Ile Ser Thr
 275 280 285
 Val Phe Thr Arg Ala Ala Ala Thr Leu Gln Ala Met Ala Thr Thr
 290 295 300
 Ala Val Leu Thr Thr Phe Gln Ala Pro Thr Asp Ser Lys Gly
 305 310 315
 Ser Leu Glu Thr Ile Pro Phe Thr Glu Ile Ser Asn Leu Thr Leu
 320 325 330
 Asn Thr Gly Asn Val Tyr Asn Pro Thr Ala Leu Ser Met Ser Asn
 335 340 345
 Val Glu Ser Ser Thr Met Asn Lys Thr Ala Ser Trp Glu Gly Arg
 350 355 360
 Glu Ala Ser Pro Gly Ser Ser Ser Gln Gly Ser Val Pro Glu Asn
 365 370 375
 Gln Tyr Gly Leu Pro Phe Glu Lys Trp Leu Leu Ile Gly Ser Leu
 380 385 390
 Leu Phe Gly Val Leu Phe Leu Val Ile Gly Leu Val Leu Leu Gly
 395 400 405
 Arg Ile Leu Ser Glu Ser Leu Arg Arg Lys Arg Tyr Ser Arg Leu
 410 415 420
 Asp Tyr Leu Ile Asn Gly Ile Tyr Val Asp Ile
 425 430

<210> 516
 <211> 2749
 <212> DNA
 <213> Homo Sapien

<220>
 <221> unsure
 <222> 1869, 1887
 <223> unknown base

<400> 516
 ctccacggt gtccagcgcc cagaatgcgg cttctggtcc tgctatggg 50
 ttgcctgctg ctcccaggtt atgaagccct ggagggccca gaggaatca 100

| | | | | | | | | | | | | | | | | |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Lys | Gly | Arg | Val | Ser | Ile | Arg | Asp | Ser | Arg | Gln | Glu | Leu | Ser | Leu | 80 | 90 |
| Ile | Val | Thr | Leu | Trp | Asn | Leu | Thr | Leu | Gln | Asp | Ala | Gly | Glu | Tyr | 95 | 105 |
| Trp | Cys | Gly | Val | Glu | Lys | Arg | Gly | Pro | Asp | Glu | Ser | Leu | Leu | Ile | 110 | 120 |
| Ser | Leu | Phe | Val | Phe | Pro | Gly | Pro | Cys | Cys | Pro | Pro | Ser | Pro | Ser | 125 | 135 |
| Pro | Thr | Phe | Gln | Pro | Leu | Ala | Thr | Thr | Arg | Leu | Gln | Pro | Lys | Ala | 140 | 150 |
| Lys | Ala | Gln | Gln | Thr | Gln | Pro | Pro | Gly | Leu | Thr | Ser | Pro | Gly | Leu | 155 | 165 |
| Tyr | Pro | Ala | Ala | Thr | Thr | Ala | Lys | Gln | Gly | Lys | Thr | Gly | Ala | Glu | 170 | 180 |
| Ala | Pro | Pro | Leu | Pro | Gly | Thr | Ser | Gln | Tyr | Gly | His | Glu | Arg | Thr | 185 | 195 |
| Ser | Gln | Tyr | Thr | Gly | Thr | Ser | Pro | His | Pro | Ala | Thr | Ser | Pro | Pro | 200 | 210 |
| Ala | Gly | Ser | Ser | Arg | Pro | Pro | Met | Gln | Leu | Asp | Ser | Thr | Ser | Ala | 215 | 225 |
| Glu | Asp | Thr | Ser | Pro | Ala | Leu | Ser | Ser | Gly | Ser | Ser | Lys | Pro | Arg | 230 | 240 |
| Val | Ser | Ile | Pro | Met | Val | Arg | Ile | Leu | Ala | Pro | Val | Leu | Val | Leu | 245 | 255 |
| Leu | Ser | Leu | Leu | Ser | Ala | Ala | Gly | Leu | Ile | Ala | Phe | Cys | Ser | His | 260 | 270 |
| Leu | Leu | Leu | Trp | Arg | Lys | Glu | Ala | Gln | Gln | Ala | Thr | Glu | Thr | Gln | 275 | 285 |
| Arg | Asn | Glu | Lys | Phe | Trp | Leu | Ser | Arg | Leu | Thr | Ala | Glu | Glu | Lys | 290 | 300 |
| Glu | Ala | Pro | Ser | Gln | Ala | Pro | Glu | Gly | Asp | Val | Ile | Ser | Met | Pro | 305 | 315 |
| Pro | Leu | His | Thr | Ser | Glu | Glu | Glu | Leu | Gly | Phe | Ser | Lys | Phe | Val | 320 | 330 |
| Ser Ala | | | | | | | | | | | | | | | | |

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